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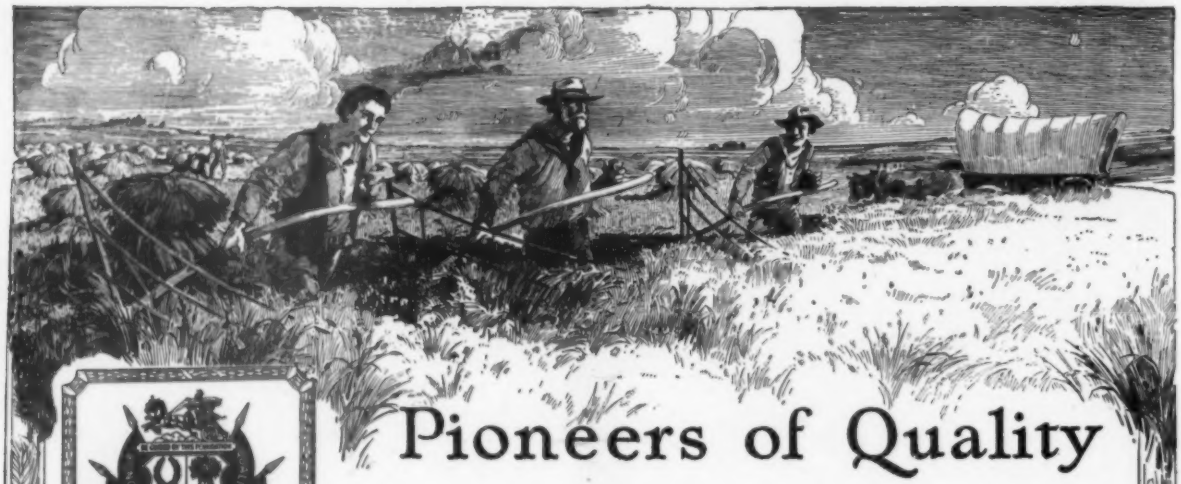

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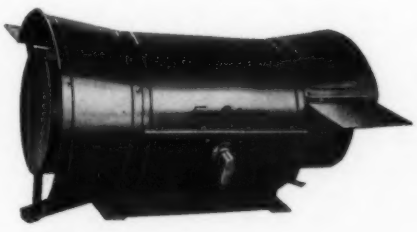

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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NEVER before has FIRE ENGINEERING published so fine an issue as the next issue promises to be (October 10th) nor ever has a copy been so widely circulated.

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¶ Manufacturers will be represented as never before, showing just what they have to offer in the way of new equipment and supplies for the fire departments of the country.

¶ October 18th to 22nd we shall expect to see you at New Orleans; but only a relatively small proportion of the fire officials of the country can actually be there in person. The others, thousands of them, will depend upon FIRE ENGINEERING for their information,—and we are mighty glad to be able to serve you in this constructive way!

The Publishers

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in Manchester, New Hampshire

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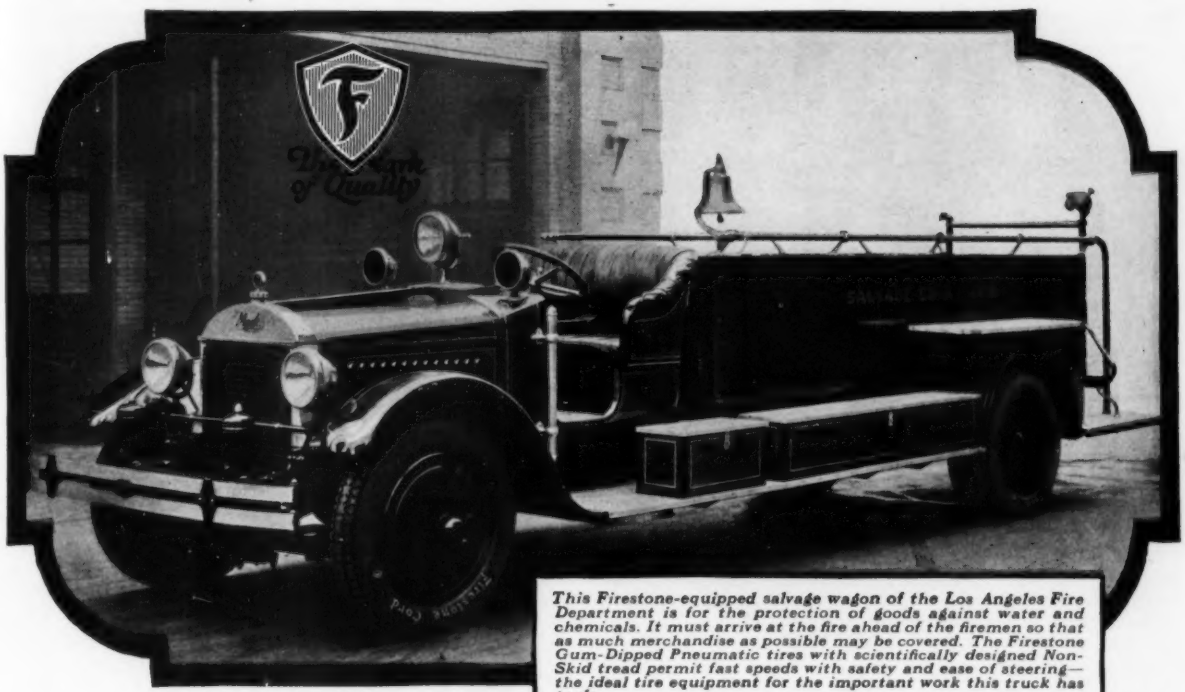

This Firestone-equipped salvage wagon of the Los Angeles Fire Department is for the protection of goods against water and chemicals. It must arrive at the fire ahead of the firemen so that as much merchandise as possible may be covered. The Firestone Gum-Dipped Pneumatic tires with scientifically designed Non-Skid tread permit fast speeds with safety and ease of steering—the ideal tire equipment for the important work this truck has to do.

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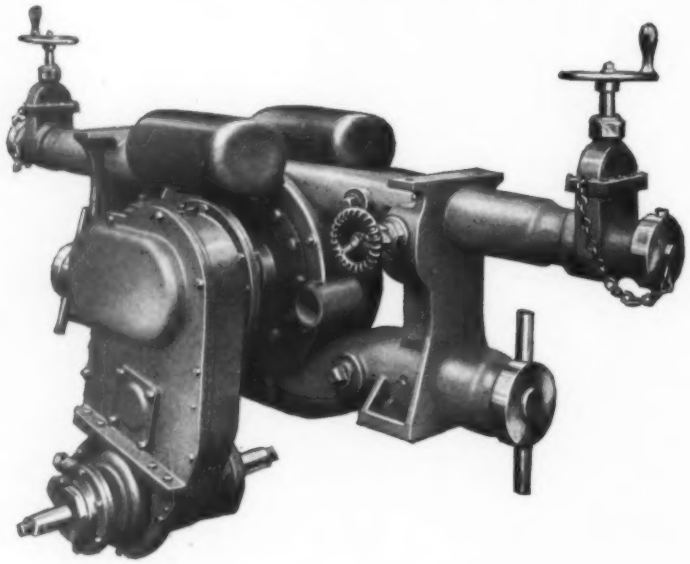
AMERICANS SHOULD PRODUCE THEIR OWN RUBBER .. Harvey S. Firestone



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(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Leading Journal of the Fire Protection Profession

VOLUME LXXIX SEPTEMBER 25, 1926 NUMBER 18

A City Pumping Station Fire and Its Lessons

Lightning Partly Destroys Mansfield, Ohio, Water Works Pumping Station—All Pumps Put Out of Commission

THE vital importance from a fire protection standpoint of the fire described in this article, involving as it did the safety of the entire city of Mansfield, Ohio, makes it of unusual interest to fire chiefs. The destruction of a large part of the pumping equipment of the central water works station arose from a stroke of lightning, which, passing all protecting devices, exploded a transformer.

From this the blaze spread throughout the central portion of the building, and most important of all, stopped all the pumping apparatus of the city. Fortunately, the water remaining in the mains, as the station was situated in the lower portion of the city, was of sufficient quantity and pressure to enable the fire-fighters to successfully cope with the blaze, and this, added to prompt and efficient work under Chief W. H. Remy, resulted in the saving of the electric pumping equipment and the control devices.

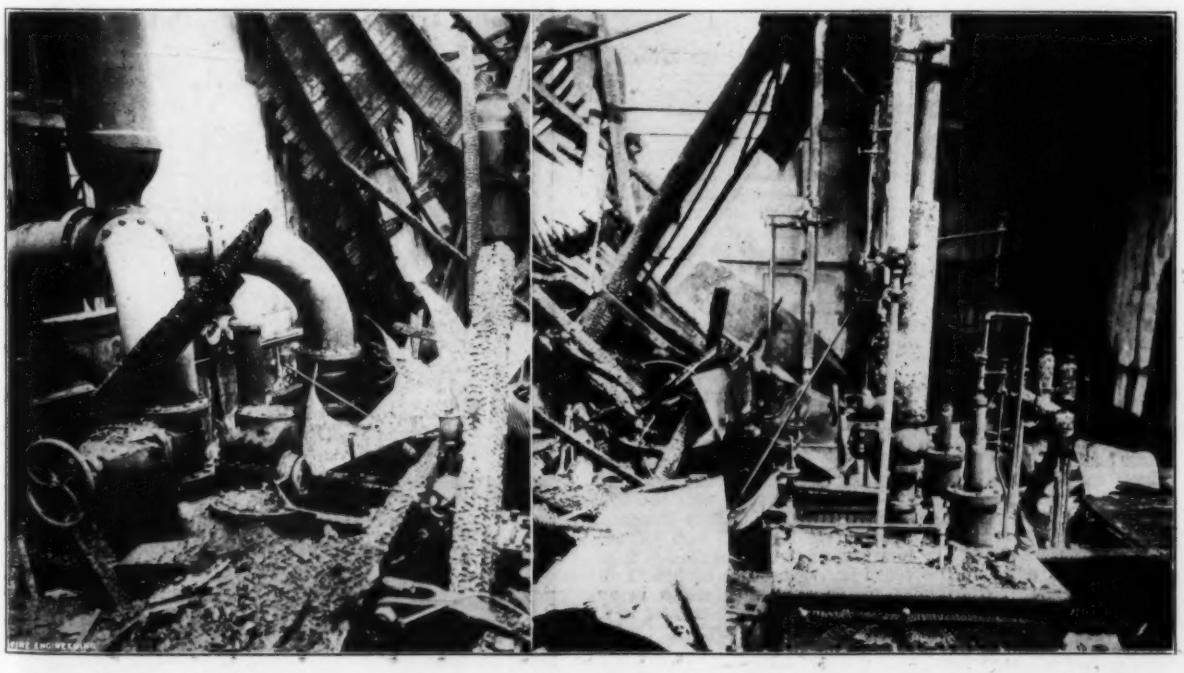
The water works pumping station was a one story brick structure, built forty-five years ago. Chief Remy received the alarm at 11:45 p. m., and responded with twenty men and apparatus consisting of two white pumpers and a Packard chemical and hose car. It was then discovered that the pumps were out of service, the stroke having burned out all electric connections, and the steam boiler and pump room being on fire.

However, Chief Remy immediately ordered connections to be made to one 4-inch double and four 6-inch double hydrants, the nearest to the blaze, and he and his men were overjoyed to find a good supply of water at a hydrant pressure of 80 pounds. Two engine and three hydrant streams were thrown, some 2,000 feet of hose being laid. The water main supplying the hydrants was a 12-inch pipe.

After a hard fight the fire was confined to the middle part of the pumping station.

A Report on the Fire

The following report on the fire which has been issued by the Ohio Inspection Bureau, gives a very clear idea of



Two Views of the Steam Pumping Room after the Mansfield Pumping Station Fire, Showing the Effects of Blaze.

the unusual details involved, and points out the lessons to be learned from the unfortunate experience of the city of Mansfield:

Due to the importance of the structure involved as affecting fire protection of the city, as well as several unusual and interesting features which developed during the fire which caused

Ruins of the Boiler Room After Fire, Mansfield, Ohio, Water Works.

material damage to the main pumping station of the Mansfield Water Works, we are publishing the following report.

Lightning Bolt Passes All Protective Devices

What was said to have been one of the most severe electrical storms in the history of the city occurred shortly before midnight Sunday, June 13, at the height of which a heavy bolt of lighting ran in over the high tension wires leading into the main pumping station, passed all protective devices and exploded a transformer resulting in a fire which practically destroyed two-thirds of the building, cut off all electric current for pumping operations at the main and auxiliary stations and rendered useless all reserve steam pumping equipment and emergency electrical generating apparatus. Twelve hours were required to put the main station electric pumps back into service and somewhat less time to restore partial service through auxiliary stations.

The Water Works Pumping Station

The structure involved is a one-story ordinary brick building approximately 115 x 50′ with one story frame coal shed, the main building being in three adjoining and communicating sections; the west section contains the electric driven, automatic controlled pumps for the high and low service, also the fire service booster pumps for each; the center section contains four reserve steam pumps, two for the high and two for the low service, and the east or rear section contains three 225 h. p. steam boilers, under one of which fires were kept banked at all times, a reserve steam driven electric generator which in an emergency was supposed to be used for supplying current to a considerable portion of the city's pumping equipment, exclusive of the main high and low service pumps at the main station and also the main switchboard where incoming public service current was distributed both to the main pumping station and to all pumping stations owned by the city and scattered in various places as well as the city sewage disposal plant. Current for the operation of the pumps at the main station is transformed from 220 to 440 volts through a single bank of transformers located in a small fireproof room cut off by tin-clad fire doors from the main pump room.

All Pumping Equipment Put Out of Service

During the height of the storm lightning came in over the single high tension line, passed all protective devices, presumably exploded a transformer located above the main switchboard, quickly involving it in a mass of flames which spread throughout this room and the middle section of the building, immediately cutting off all current and stopping all pumping equipment. The single attendant on duty was badly dazed by the shock but succeeded in reaching the telephone which was still in service and turned in the fire call at 11:45 p. m. Engine Company No. 2 located three blocks away responded promptly, followed by Engine No. 1 from headquarters. The department found two sections of the station burning firecely with all water works pumping equipment throughout the city inoperative, the system being entirely a direct pressure proposition.

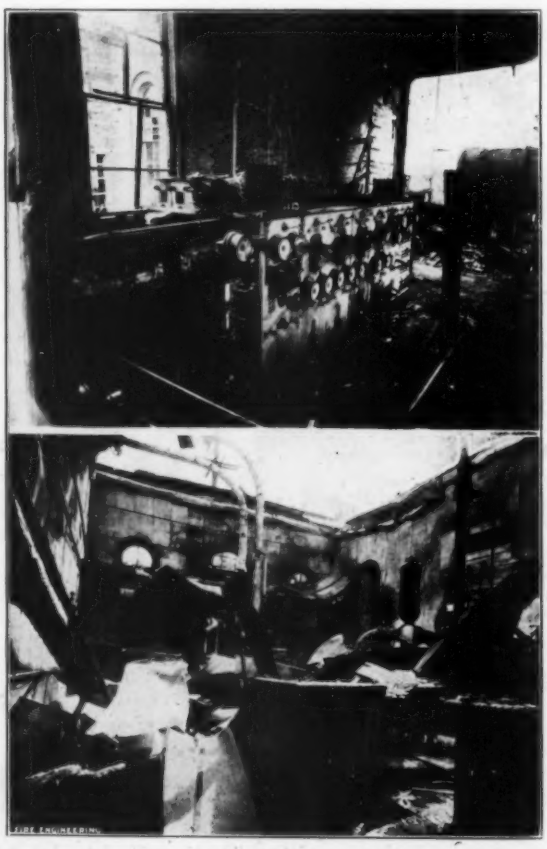
Fire Fought With Water Remaining in Mains

Connection was immediately made with adjacent fire plugs, however, and the station being located in the lowest section of the city the large quantity of water held in the mains drained back to this point and at no time was the department handicapped in their work, directing a total of five streams from their pumpers until the fire was brought into control. A sixth line was also run in from the Ohio Brass Company, an adjacent manufacturing plant, supplied by the plant's private fire pump. The department by most excellent work succeeded in confining the fire to the center and rear sections, there being four large unprotected openings between the center section and the electric pump room. No damage of any kind resulted to the main electric pumping equipment or control devices.

Damage to the Plant

The fire was extinguished after the roof of the center section.

(*Continued on page* 954)



Mansfield, Ohio, Pumping Station Fire. Upper, Wreck of the Switchboard Room, Where the Lightning Struck. Lower, The Steam Pumps after the Fire.

Value of a Fire College to a Department

Importance of Training Officers Who Can Train Men—Sample Lecture Presented During Course

By S. H. DODD, 1st Asst. Chief, Los Angeles, Cal.*

THE many fire departments throughout the country with their system of promotions to the higher positions from men in the ranks, must give serious consideration to the problem as to whether or not the next to be advanced is properly trained. Too often the one in command has not the proper training for such a high post. The following paper on the value of a fire college brings forth many of these points.

There are several reasons why I believe the fire department of a large city should have a fire college. In every fire department there are chief officers who have spent the greater part of their lives in the fire service, who are known to be efficient men, and the knowledge that they have gained regarding the city, its buildings, its hazards, and the operation of the fire department is invaluable. This knowledge has been acquired as a result of practical experience and the close study of fires, their prevention, control and extinguishment.

These officers no doubt can recall mistakes that have been made at fires, some of which were very costly, and from which they have profited by the experience gained. When these men leave the department they take with them all the benefits of the years of experience in this work. If the results of this experience could be given to the younger officer, it would assist him in the different emergencies he may be called upon to meet.

Ranking Officer Must be Competent

We must realize that the ranking officers of today must think as professional engineers, having some knowledge of the construction of buildings, their desirable and undesirable points from the fire fighter's standpoint; water supply and its distribution; fire hazards of all kinds; a little knowledge of chemistry will sometimes save lives at fires. To acquire this knowledge a man must constantly study these and similar subjects, if he is to be a competent officer. We realize that no man can be intimately familiar with all phases of fire department work, but we believe that in the fire college he will be enlightened on subjects of which he has little or no knowledge, and will therefore become more efficient. If the methods used and results obtained in handling fires involving great hazards are imparted to the younger men by the officers in charge of such fires, they will be better fitted when called upon to meet such emergencies. Again, the fire college is the place where this information could be given.

We must also realize that as a result of rapidly changing times and conditions, bringing expansion of industry, with new processes of manufacturing, the manufacturer is more interested in the effect of these new processes upon his overhead expenses than he is upon the fire hazards involved. Here again, if the fireman has adequate knowledge of how these hazards may be prevented or controlled, he will be able to formulate a plan of action and proceed accordingly. Without such knowledge he has nothing to guide him and his ignorance of such hazards might result disastrously. If he had previously received this knowledge in the Fire College he would be better equipped to handle such a situation.

Education and Training Important

We must realize today that courage alone is not a sufficient qualification. A man must know how to use his head in emergencies. Sometimes at a fire a man will endure great punishment in order to reach a desired position which could be reached more quickly and with less hardship if he had had some instruction as to the best course of action to follow in such a case. Again, in this case, the course of instruction given in the Fire College would be of great assistance. He has heard the lectures and seen them illustrated with slides and moving pictures; he has been given the theory and put it into practice; he sees it work out successfully and he realizes he still has much to learn in the fire fighting service. Thus the time spent in the Fire College has been of real benefit to him and to the Department, as well as to the community. Firemen should realize that whenever a mistake is made at a fire and property destroyed which might have been saved by a little headwork, it reduces the amount of taxable property, resulting in fewer property taxes and therefore less money available for the maintenance of the Fire Department.

In the Fire Department there are always a number of good, energetic men who are ambitious to advance and who study everything relative to fire department work, realizing that if they intend to follow this profession, they must fit themselves for advancement. They know that competition for higher positions is keen and that the instruction received in the school will better enable them to attain and hold such positions.

Some Men Lack Initiative

There is also a class of men with a limited education, who are good firemen but are content to go along, thinking they are too old to learn and unable to express themselves in writing. They never study anything pertaining to their work until an examination is called, and then attempt in a few days to store in their minds the learning that should have been acquired through years of study and observation. If these men had attended the fire college and taken the courses given there, they would be better prepared to pass an examination with a rating high enough to assure them a position, and the department would also be benefitted by securing good officers; whereas, if left to their own resources, they would never advance. By requiring them to attend the college, they soon realize they are receiving an education along lines they thought impossible, and again the department benefits.

The Los Angeles City Civil Service Commission is given a copy of lectures and lessons which are presented in the course,

First Graduation Class of Officers of the Los Angeles Fire College.

The graduation exercises were held on March 10, 1926 and the graduating class consists of 180 men. In the center of the first row is (1) Captain W. W. Tebbetts, assistant instructor, and (2) 1st Asst. Chief S. H. Dodd, in charge of the college.

and this Commission has cooperated with the department by using this subject matter in examinations for higher positions in the department. A certain per cent of credit is allowed in these examinations for graduation from this College, for it is realized that we are trying to train our men along certain lines for the betterment of the department.

Officers Have Important Public Trust

Generally, a man passes an officer's examination and is certified to the department for promotion. He is placed in charge of a company protecting a district which involves thousands of lives and hundreds of thousands of dollars' worth of property. If he makes a mistake that results in the loss of lives and property, the department is criticised. Why shouldn't he be educated so that he can meet the emergency and use his own initiative, instead of hoping, as some do, that the chief will soon arrive and assume responsibility? He owes it to himself, to the fire department and to the tax-payers to better fit himself, so that he can give to the citizens of his community the best that is in him, and retain the respect which they now accord to the fire department.

Following is reproduced one of the lectures of the course adopted in the Los Angeles Fire College, which will give a

* Paper read at convention of California State Firemen's Association.

good idea of the thoroughness of the training given the officers of the fire department:

Lecture on Principal Acids and Chemicals Used by Manufacturers in Processes and in Drug and Chemical Dealers' Warehouses

You will note in all cases where roof and floor ventilation is recommended that the gases or vapors are supposed to be heavier than air, but in all cases may be carried along by the volume of hot air during combustion. Officers and members should bear in mind that they may find in warehouses cylinders containing compressed gases, which, when liberated by breakage or explosion, would give off inflammable or poisonous gases.

Acetic Acid. Occurs in nature in the juices of many plants and in certain animal fluids. It is obtained for commercial use largely from the manufacture of wood alcohol by the dry distillation of wood. Mixed with chromic acid it is explosive as also are its salts. It dissolves albumen, resin, etc. It is used as medicine, in the household, in photography, in the manufacture of varnishes and coloring matter. Kept in glass carboys and barrels. A dangerous fire hazard and disabling gas. Use water to extinguish fire.

Acetone. A colorless liquid. Shipped in tank cars, drums, tin cans and carboys. Used in making varnishes, lacquers, celluloids, chloroform. Inflammable and explosive gas. Roof and floor ventilation. Smother, if possible; otherwise use large volume of water. R. R. shipping label is red.

Acetylene. In steel cylinders. Explosive when highly heated.

Ammonium Nitrate. Colorless crystals; explosive. Used in the manufacture of certain "flameless" explosives and for making nitrous oxide (laughing gas). Kept in iron canisters. Dangerous fire hazard; will explode by percussion at 70 deg. Use water to extinguish the fire.

Amyl Acetate. Commonly called banana oil. Colorless liquid, bananalike odor. Shipped in iron drums, tin cans and bottles. Used in making lacquers, water proofing compounds, metallic paint, perfumes and flavoring compounds. Floor and roof ventilation. Gives off explosive, inflammable and disabling gas. Smother, if possible. Water spreads the fire.

Benzine. Petroleum ether. A mixture of several of the lighter constituents of petroleum. Used as a solvent in cleaning establishments, chemical works and in the rubber industry. A solvent for fats, resins, gums, etc. Roof ventilation. Gives off an explosive, inflammable gas. Water will spread the fire. Shipped in tin cans and iron drums.

Bleaching Powder. A white powder, strong chlorine odor. Used in textile bleaching, organic synthesis; disinfectant. Kept in wooden barrels and iron drums. Water can be used to put out fire. See "Chlorates, Nitrates and Peroxides."

Carbon Bisulphide. Commonly called Carbon Disulphide. A clear colorless, inflammable liquid. Odorless when pure. Commercial article gives off a strong, disagreeable, poisonous odor. Shipped in iron drums. Used in making varnishes, matches, insectide, in manufacture of carbon tetrachloride. It cannot be shipped by railway express. It is heavier than water and will not float on the surface. If it cannot be smothered use lots of water. Gives off an explosive, inflammable and disabling gas. Floor and roof ventilation.

Chlorine. Heavy green gas or liquid; very poisonous; kept in steel cylinders. Used for purifying water; also for making bleaching powder. Military poison gas. A disabling gas. Floor and roof ventilation. Will not burn itself. Any combustible material soaked with turpentine or ethereal oils will ignite spontaneously if mixed with chlorine gas.

Chlorates, Nitrates and Peroxides. Dangerous when heated in a burning building, due to the amount of oxygen released, thereby increasing the intensity of the fire. Roof and floor ventilation. Chlorates and nitrates when mixed with phosphorus, sulphur, sugar and various organic combustibles form explosives which may be ignited by flame or percussion.

Chlorate of Potash. A colorless crystal or white powder. Shipped in wooden barrels. Should not be ground or mixed with any sugar, sulphur, sweepings or combustible substances, as it may cause an explosion. Gives off a non-inflammable and disabling gas if it comes in contact with acids, particularly sulphuric acid. Use plenty of water to extinguish.

Chlorate of Soda. Colorless, odorless crystals; cooling salty taste. Must not be ground or mixed with any combustible substance. Used for medicine; oxidizing agent; manufacture of matches and explosives. Shipped in iron barrels and glass bottles. Gives off a non-inflammable and disabling gas if it comes in contact with acids, particularly sulphuric acid. Use water on the fire. See "Chlorates, Nitrates and Peroxides."

Ether. A colorless liquid; very inflammable. Shipped in iron drums, glass bottles and tin cans. Used in the manufacture of smokeless powder, medicine and in laboratories. Gives off an explosive, inflammable gas. Roof and floor ventilation. Water will spread it. Smother, if possible.

Ferric Nitrate. Gray-white crystals. Soluble in water. Used in textile industries; dyeing; medicine. Kept in wood barrels. Water will put out the fire. See "Nitrates, Chlorates, etc."

Hydro-Cyanic Gas. This gas is used in fumigating houses, to exterminate weevils in mills and to execute criminals in Nevada. An inhalation of even a small amount of the gas is apt to be fatal. The cyanide used in making this gas should be handled with leather gloves and out in the open air. The operator must avoid inhaling the dust or allowing any of the particles to fly in the eyes or mouth. It is well to use goggles. After fumigation of building, doors and windows should be opened from the outside of the building to ventilate, and under no condition should the building be entered until it has been ventilated for at least two hours. (Note: This gas is used in Los Angeles in fumigating and 24 hours' notice must be given Fire Prevention Bureau of time and place).

Hydrochloric Acid. Commonly called mureatic acid. The acid used for commercial purposes is a yellowish, poisonous liquid. Shipped in carboys, glass bottles; sometimes in wooden tank cars.

(*Continued on page 954*)

W. Orange, N. J., Chief to Retire

After serving West Orange, N. J., for the past thirty-two years, Chief James J. Sheehan will be placed on the pension list on October 15.

He is sixty-five years old and was one of the first to enroll when the new fire department was organized on March 6, 1894. Chief Sheehan served as assistant driver for six months and then at the suggestion of the mayor, was made head of the department. The man who was active for his appointment as chief is now mayor of the city.

Chief James J. Sheehan, West Orange, N. J.

In commenting on the retirement, Commissioner Woodhull said that the town would lose an energetic and faithful servant and that it was with regret that he was compelled to announce the retirement of one who had served the town both efficiently and energetically.

Examinations will be held on October 2 for a new chief, captain and firemen in the town hall.

Flood Light Built by Columbia, S. C.

A flood light which is taken to fires by the service truck, has been constructed by M. McCraney, master mechanic of the fire department at Columbia, S. C. It has responded to two large fires and has already paid for itself. The apparatus is of the trailer type and consists of four 10-inch and two 16-inch floodlights equipped with 1,700 feet of heavy rubber insulated wire in fifty to 250 feet lengths mounted on three reels. The power is generated with a 110 volt Delco generator; the power of the bulbs varies from 100 to 500 watts, and the generator is capable of handling six lights at one time.

Furniture Plant Lost When Second Fire Starts

Department Returns After Extinguishing First Fire, but Is Called Back to Second Blaze—Second Fire Travels Quickly

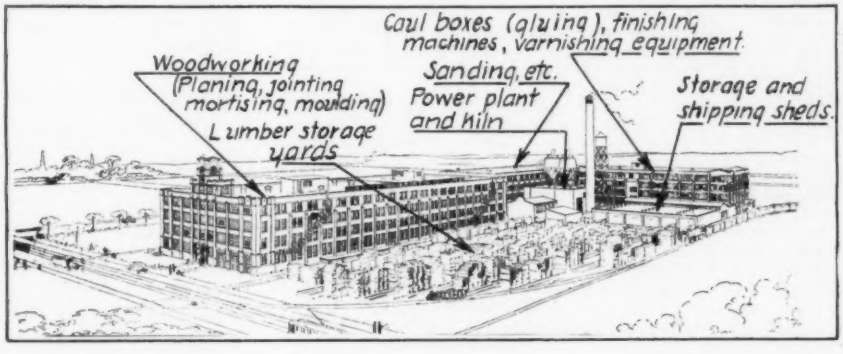
THE average wood-worker is a serious problem to any fire department when fire secures a hold, unless unusual care is taken in providing fire protection, as well as maintaining excellent housekeeping. Fast travel of fire once it has started in this type of establishment may be expected.

The fire described in the article of the series on administration occurred in one of our northern central cities. The ground diagram and the sketch of plant herewith gives an idea of the layout.

The Plant

This plant is engaged in the manufacture of furniture of the better grade. While the operations performed on the various floors are not the same for any particular section of the building, still the general processes for each section are shown in the ground plan. In other words one floor in one particular section may be devoted to planing while the floor below it in this same section might be devoted to jointing but to list and consider the various operations in every particular part of the plant would be an unweildy proposition so that the operations will be considered as shown in the ground diagram.

The heavier work is therefore done in the wing in the foreground. In this building planing, joining, morticing and moulding is done. In the section just beyond this building sanding and other work prior to the finishing is performed. Alongside of the sanding section is the power plant and kiln. The kiln is used for curing the lumber prior to working it. The building in the background is employed in gluing, finishing and varnishing operations while the low building alongside the railroad tracks is used for storage and shipping. The lumber is piled in the ell of the plant.


Caul boxes (gluing), finishing machines, varnishing equipment.
Woodworking (Planing, jointing mortising, moulding)
Sanding, etc.
Power plant and kiln
Storage and shipping sheds.
Lumber storage yards

One defective feature about the equipment in this plant was the dust and shaving removal equipment. Instead of having pipes at each machine to take the shavings as they were thrown off, each machine was equipped with a hopper into which the shavings were brushed from time to time. In other words these hoppers were opened up and afforded a means for fire communicating from one part of the plant to the other. These hoppers were all connected with a large cyclone blower operated at the power plant and which discharged the shavings and dust into a bin in the boiler room.

This proved a very damaging condition at the second fire. At the time the fire occurred the blower system had been acting unsatisfactory with a result that a number of the ducts or pipes had been partly filled with shavings and sawdust.

The Fire Department

The fire department in the city in which this fire occurred consists of 12 engine companies, all equipped with motor driven apparatus; 5 hose companies, equipped with combination chemical and hose cars; 1 aerial ladder company and 3 city service truck companies.

The water pressure in the mains of this city in the locality of the fire varies between 50 and 100 pounds.

At the time of the fire there was apparently good pressure.

Response to alarms at the location of this fire is as follows: First alarm, Engine companies Nos. 1, 2 and 3; Hose Company No. 1 and Ladder Co. No. 1 (City Service Truck).

Second alarm, Engines Co. Nos. 4, 5 and 6; Hose Co. No. 2; Ladder Co. No. 2 (Aerial Ladder).

Third alarm, Engine companies Nos. 7, 8 and 9; Hose No. 3; and Ladder Co. No. 3.

The Fire

The fire started late in the afternoon, while the factory was still in operation, at the point shown in the ground plan. This was at the shaving bin at the rear of the power plant. The fire secured a fairly good start but an alarm was transmitted by box without delay once the fire was discovered, bringing in a first alarm assignment consisting of Engine Companies Nos. 1, 2 and 3; Hose Co. No. 1; Ladder Co. No. 1 from the city fire department.

Hydrants available were as shown on the diagram. Engine Co. No. 1 was stationed at Hydrant No. 1 and a single line stretched to the doorway leading from the sanding building into the power plant. This line was operated with a 1¼ inch nozzle.

Second engine stationed at Hydrant No. 4 and a single line stretched to the same point.

Third engine stationed at Hydrant No. 2 and stretched single line to rear of power plant, operating on the fire from this point. These three lines, after operating for about fifteen minutes had fire well under control so that two engine companies returned leaving the third company to wet down.

This was fully accomplished inside of an hour.

The remaining company thereupon returned to its station.

About 9 o'clock in the evening the watchman on his rounds discovered fire burning at the point marked X and labeled "second fire started here" in the ground plan.

He pulled one of the boxes in the plant which was connected to the city fire alarm system bringing in a first alarm assignment.

Before the apparatus arrived, however, fire had entered the second floor of this building and due to the fact that there was a large quantity of shavings around, the blower having been out of commission for a part of the afternoon—fire quickly spread along this second floor. The department upon arriving stationed Engine No. 1 at Hydrant No. 4 and stretched a single line up stairway to the fire. It was seen at once that one line could not hold the fire so Engine Co. No. 2 was stationed at Hydrant No. 1 and Engine No. 3 at Hydrant No. 2. Both of these companies stretched in single lines by way of ladders to second floor.

After operating for a while and apparently getting the fire quite well under way another fire was discovered burning in the sanding building on the third floor. Apparently this fire had something to do with the other fire burning at the same time for in both cases the fires originated at hoppers leading into the sawdust collecting system. This latter fire had been burning for some time after the fire department was in operation before it was discovered. Immediately upon discovery a second line was stretched from Engine Co. No. 1 to the fire on the third floor of this building. But the fire had too much start for a single line to handle it so that one of the lines was withdrawn from the fire in the planing plant and put in operation in the sanding building.

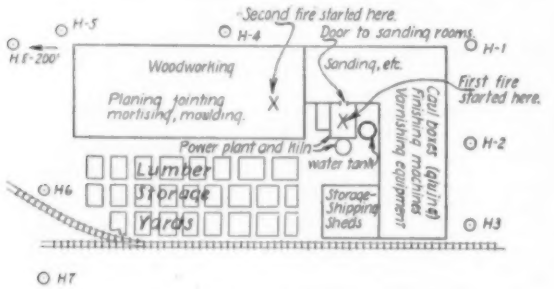
Even this second line was not able to hold the fire for it was found to break out on the top floor just above the point where it was burning on the third floor. At this time the officer in charge noticing the seriousness of the fire transmitted a second alarm which brought in Engine Companies 4, 5 and 6, Hose Co. No. 2 and Ladder Co. No. 2.

Before the arrival of this second alarm assignment fire quickly gained headway across the top floor due to the presence of a great amount of wood stock stored on the top floor of this building. So hot did the fire become above and so threatening did the fire on the third floor appear that the men were ordered to back out and operate from stair landings. Upon the arrival of the assistant chief, who responded with the second alarm, fire had fully involved the top floor of the sanding building and

had entered the top floor of the wing to the right in which the gluing, finishing and varnishing equipment was located.

From this point on the fire spread with fury, completely overwhelming the department. The assistant chief noting the seriousness of the situation once fire had entered this particular building transmitted a general alarm bringing out Engine Companies 8, 9, 10 and 11, Hose Companies Nos. 3 and 4 together with Ladder Co. No. 3.

The department under the chief, who arrived with this general alarm, did heroic work in endeavoring to hold the fire but



the wing containing the gluing, finishing and varnishing equipment was completely destroyed. Fire reached the lumber storage yards and made quick work of this.

The part of the plant the department was able to save was a part of the woodworking building in which planing, joining, morticing and moulding was done. As a matter of fact the fire did not extend more than 25 feet beyond the point where it originated in this building.

The Editor's ideas on the handling of this fire will be given in the next issue of FIRE ENGINEERING.

Schedule for "Southern Regulars" Trip

In accordance with a custom established many years ago, P. O. Hebert of the Eureka Fire Hose Company is arranging a trip for the "Southern Regulars" from Atlanta, Ga., to the convention city. In the past these trips have been very well planned and have been the means for the creation of new friendships in the firemanic fraternity, and for the re-unions of old time friends, and there is every indication to believe that the trip this year will come up to all expectations.

Mr. Hebert has prepared and distributed a booklet giving information on the train schedules of the various railroads entering Atlanta so that it will be possible to connect with the "Southern Regulars" train. It also gives the round trip fares to New Orleans, La., the convention city, and describes the itinerary of the connecting lines from the various cities and towns. The principal points along the route and the round trip fare is as follows:

City and Railroad	Time Due	R. Trip R. R. Fare
Lv. Atlanta, A. & W. P.....	6:30 p. m. Sun. Oct. 17....	$26.67
Lv. Newman, A. & W. P.....	7:36 p. m. Sun. Oct. 17....	24.59
Lv. LaGrange, A. & W. P.....	8:38 p. m. Sun. Oct. 17....	22.86
Lv. West Point, A. & W. P....	9:05 p. m. Sun. Oct. 17....	21.99
Lv. Opelika, A. & W. P.....	9:50 p. m. Sun. Oct. 17....	20.79
Ar. Montgomery, A. & W. P..	11:35 p. m. Sun. Oct. 17.....	.....
Lv. Montgomery, L. & N.....	11:50 p. m. Sun. Oct. 17....	17.22
Lv. Flomaton, L. & N.....	2:50 a. m. Mon. Oct. 18....	10.79
Lv. Mobile, L. & N.....	3:30 a. m. Mon. Oct. 18....	7.56
Ar. New Orleans, L. & N.....	8:55 a. m. Mon. Oct. 18....	.....

Tried Plans for Fire Prevention Week

Following the custom established during the administration of the late President Woodrow Wilson, a proclamation has been issued by President Coolidge designating the week of October 3-9 as "Fire Prevention Week."

In addition to placing before the public the thought of carefulness, some of the cities have utilized the prominence given to the observance of this week for the raising of funds for the purchase of needed fire department equipment. A number of the smaller cities can very well link up to the two movements with very good results.

Last year, Terre Haute, Ind., established the unique record of not having a single fire during fire prevention week. This is a record that many chiefs have tried to attain but few have been so fortunate. Terre Haute distributed about ten thousand home inspection blanks and they estimated that the printed literature entered at least 18,000 homes. In addition fire prevention motion pictures and slides were shown, and talks were given on this subject before the various luncheons and civic clubs.

The committee in Carrollton, Mo., used the week to direct the public's attention to the fact that fire can easily be caused by defective wiring. Demonstrations were made to show how an overloaded circuit heats up and how a penny used for a fuse will start a fire.

Flint, Mich., adopted as their slogan, "Guard Against Fire," and this phrase was stenciled on the main thoroughfares of the city. The local electric company in mailing their monthly bills enclosed a card with this phrase and the local Boy Scouts cooperated by distributing cards and posters throughout the city. A prize was offered to the public school that had most of the home inspection blanks filled out and returned.

Through the activities of the Philadelphia, Pa., chamber of commerce the restaurants and the hotels in the city cooperated by printing fire prevention statements on their menus. Thousands of pupils in the public schools received instruction in the proper manner of extinguishing a blaze and reporting a fire.

A fire prevention parade was held in St. Paul, Minn., and floats were constructed to emphasize the common fire hazards such as sooty chimneys and poorly installed oil burners.

Each city has ample facilities for the observance of this week, and material will be supplied by the various insurance organizations. Each town is an individual problem, and from a record of the manner in which the week was observed, it is possible to plan an effective fire prevention week.

SEVEN DIED IN THIS FIRE
Burned to death as they slept. Only three of an entire family escaped when this humble home caught fire at Belleville, Illinois, last May.
An overheated stove was the cause.
This tragedy can happen in any home. Prevent it in your home.
Keep stoves, furnaces and flues clean and in good repair. Do not overheat them.
Use care with matches and smoking materials. Clean up rubbish and trash.
Keep matches and fire away from gasoline and kerosene.
Do not tamper with electric wires or fuses. Disconnect electric irons before leaving them.
Be careful with all things which may cause fire.
Fire Prevention Week
OCTOBER 3-9, 1926
Prepared by Department of Trade and Commerce, Division of Fire Prevention, John G. Gardner, Fire Marshal

A Striking Poster Being Distributed in Illinois Calling Attention to the Large Loss of Life and Property

Indianapolis, Ind., Has Low Fire Record—The fire loss in Indianapolis, Ind., for one month of August was less than $7,000 and is the lowest in the history of the department. During the month 162 box alarms were received; during the month of July the loss was $70,000.

Modern Fire Alarm Signalling

Gong and Joker Switchboards— Installation, Operation and Care

By E. W. KEIRSTEAD, E. E.

THIS is the tenth of a series of articles on the care, installation and repair of various phases of fire alarm work. The author has had practical experience in this field, and he will answer questions on this subject that are submitted to him by the readers, free of charge. The only condition is that a stamped envelope must be enclosed for reply.

Description of Gong and Joker Boards

Gong and joker boards are equipped with the necessary apparatus to relay the alarms sent out from the fast and slow transmitters to the engine houses. Several engine houses are served by one circuit and the boards are built in any number of circuits as desired. It is necessary then that the boards be equipped with apparatus with which the alarm may be sent to the various engine houses or companies.

The apparatus on a gong board consists of the following parts for each circuit and the Joker board of the same apparatus. There are many names given to these boards namely, fast and slow time boards, primary and secondary, and joker and gong boards—the joker being the former and the gong the latter.

Each circuit has the following equipment:

1 Green bullseye for joker and white for gong boards.
Circuit tell tale number annunciator.
4-inch umbrella type tapper either open or closed circuit type.
A detachable box listing frame.
A main line relay and necessary number of contacts.

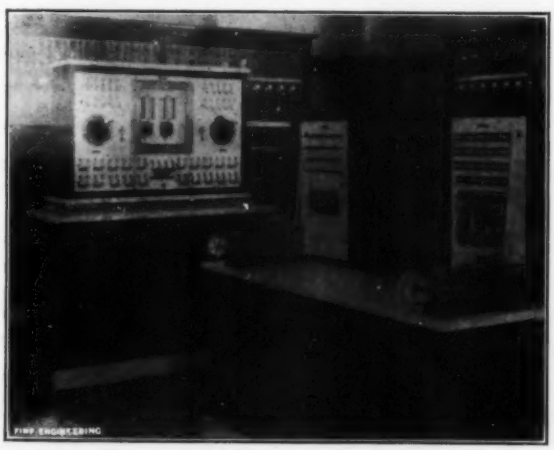


Fig. 24. Group of Gong and Joker Boards as Installed in a Large Central Office

A closed circuit key for joker board; an integral test key for gong board if of open circuit type.
Necessary cut out switches for tapper, light, key, annunciator, relay, and register.
A test jack for testing instruments etc.
A three point ground test switch.
Necessary gang switches to cut boards in for different transmitters or for manual key.
A restoring geared rack for resetting boards.

A ten-circuit gong or joker board is of about the same size as a ten-circuit relay or storage battery switchboard and can be obtained in either slate or marble panels. The relays are mounted in dustproof pockets to insure freedom from dust and dirt.

The boards are equipped with a manual resetting device, but on special order can be had in a remote control solenoid resetting device so that it is possible to reset the boards from the telephone desk or the operator's pedestal.

When placing orders for gong or joker boards it is a good idea to order one with a few spare circuits so as to take care of future expansion of the office. If it is possible to have art metal cabinets in which to mount the boards it will be well to do so as it will permit the placing of glass doors on the back of the cabinet to keep all dust and dirt away from the working parts of the boards.

All relay contacts and the telegraph key contacts are of silver and all the finished parts are of the best grade of hard brass or bronze, and with a little care will give a great number of years of service.

The various switches are all marked at both ends of the boards. The bullseye lights on these two boards are of the flashing type and flash once for each opening of the circuit, or if of the open circuit type, they will flash once for each making of the circuit.

Installation of Gong and Joker Boards

The boards should be installed in a clean dry place and should if possible be close together and not separated with any other type of boards in between them. The operators have to watch these boards so they should be placed in a position where it is possible to see them from the operating end of the office. They can be placed on iron pipe frames or in art metal cabinets. These give a better protection to the boards than the pipe rack and they are a neater looking job. The rack frame or art metal cabinet is set up and the board placed upon it and tightened. Care must be used in tightening up the bolts holding the board, and the board must be attached to the frame squarely or it will crack or break.

The boards should be protected from the direct rays of the sun to prevent discoloration; the brass parts will tarnish and have a dirty color as a result of this.

General instructions on the installations of all types of switchboards were given in a past issue and can be used for any type board described in these articles. A great number of wires terminate at these boards and special conduit construction will have to be worked at the time the boards are placed in position. It is necessary to feed the lights with 110 volts either direct or alternating current being suitable. The wiring on this circuit should be placed in rigid iron conduit and should be run in accordance with the fire underwriters rules. These lines hook on to the fuse blocks attached to the boards.

The lenses in the Joker boards are colored green and in the gong board are white. Both lenses are about two inches in diameter and of clear cut glass. They give a strong clear light and can be seen for any normal distance.

All wiring on the boards should be hooked up as is marked and you should check yourself on all connections before attaching them to the binding posts. The ground wires are common and one ground can be used on any number of boards. When you are tightening the connections on the backs of the boards be careful you do not strip the threads as it is very easy to do this or to turn the stud off.

The wires will have to be of the polarity as marked on the boards otherwise the circuit will fail to function properly. It is not only necessary to have the correct pair but also the right leg on every stud on the boards. The terminals for the local battery are plainly marked and should be attached as shown on the print sent with the board. One local battery in some cases serves as many as three boards and it depends upon the local apparatus in the circuit as to how many batteries are needed.

If slate or marble kickplates and shelves are used, care should be taken in placing them on the boards. They should be shimmed up with cardboard and should not be tightened too tight. The shelf should not be used as a seat as it is not strong enough to sustain a great weight. These parts are for ornamental purposes and are not to be used as the regular equipment.

Operation of the Joker and Gong Boards

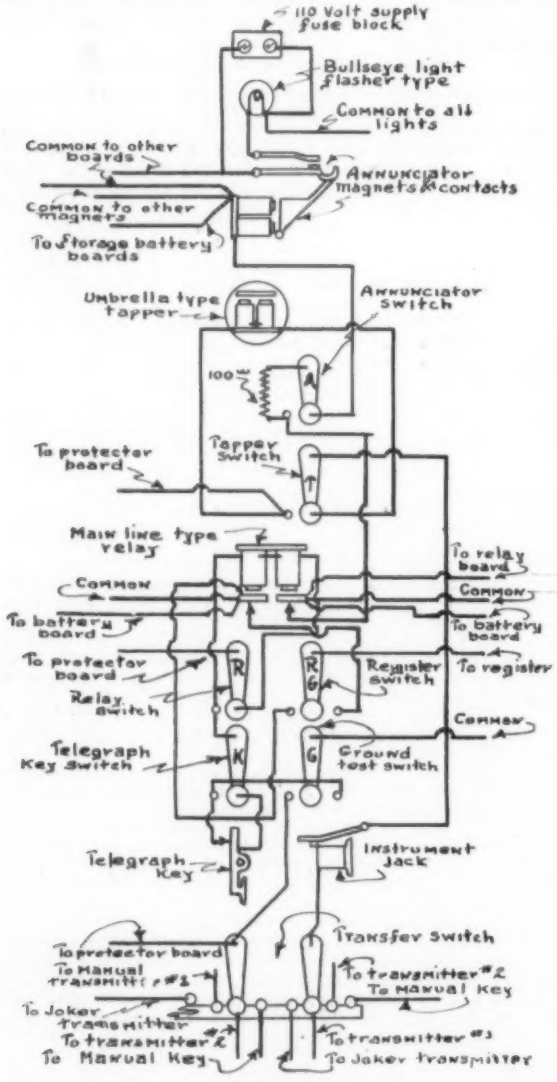
When an alarm of fire is received in the central offices, the fast and slow time transmitters are set up after the box has been verified with the tape record. At the proper time the transmitters are started and it is at this time that the joker and gong boards are placed into use. With the two boards set for operation from the manual transmitter, and the transmitter set in motion the following takes place: the green and white lights on both boards will flash once for each blow; the 4-inch tapper will strike once for each opening or breaking of the circuit; the number annunciator will drop down and stay down on the first blow; the relay will operate and run the register the register punching once for each blow. Each circuit on the board will do as above described unless the circuit is cut out and it then can not of course operate.

Each time the circuit is interrupted a blow will be sent through to the engine houses as these boards work the same as the relay boards.

There is a telegraph signal key for each circuit and it is used for special signaling between the engine houses and headquarters. Signals sent by these keys include those for extra companies, still alarms where only a certain number of companies are to be notified, details of special men, time signals, and watch reports of stations. There is a key in each engine house and it is used to cut in the circuit so as to be able to call the central office as well as the central office calling the houses.

When repairing the fire house circuit lines, the repairmen call in to the office for directions and are answered over the signal key.

There are six switches on this board and they are used for cutting out the different apparatus in order to allow repairs to be made without disturbing the operation of the office and



Sketch No. 25

boards. A switch is provided to cut out of circuit the following named apparatus: tapper, relay, register, annunciator, light and manual key.

When changing reliefs it is well to have the man in charge go to each gong and joker board and see if any switches are in an out position. Note should be made at this time of any abnormal workings of the apparatus and the information should be entered in the record book—a man should be detailed to correct the condition. The operation of the registers should be checked at this time and should be wound up full. The registers will run for a few hundred blows but it is best to wind it up every week. Or if alarms are numerous it should be wound up at every change of the watch.

Main line registers are not used because of the amount of current needed for their safe operation. The registers are of the open circuit type and are controlled by the main line relays. These relays require very little current and operate on a current as small as 30 milliamperes. They have very little mechanical work to do and are therefore better to use than the register.

The line current is apt to drop at any time and this is caused by grounds and many other causes. If the line current dropped and relays were not used, the registers would work if the line went as low as 80 milliamperes. The relay should be adjusted so as to attract at a current of 30 milliamperes. Care should be taken to see that the relay will work on this adjustment. The silver contacts should be cleaned with a fine piece of sandpaper or a dental file. Emery cloth should never be used under any circumstances. The board should be wiped with a prepared cloth and no polish should ever be used on any of the apparatus as it will tend to tarnish the finish. All silver contacts on the annunciator and key contacts should be kept bright and clean at all times to insure proper operation. All switch contacts should be brightened with a piece of fine sandpaper and the spring contacts on the switch arm cleaned in the same manner.

Whenever you are working on any apparatus cut it out of the circuit by means of the cut out switch. This enables one to work on the board without disturbing the continuity of the line in any way.

An electric light should be installed at the back of each board to permit the men to work on the boards at any time. The light should be set so as to point downward and it should be placed at the top of the board or cabinet. Use a separate supply for these lights and keep the line feeding the tell tale lights separate.

Figure No. 24 shows a group of gong and joker boards as installed in a large central office. You will note that they are close to the manual transmitter and that the operator's pedestal; here the operators work when sending out alarms. The registers and time stamps shown on the operators pedestal directly in the foreground are for the gong and joker circuits. You will note the proximity of all the operating apparatus and in order to transmit alarms as fast as possible, it is absolutely necessary to have the operating end of the office centralized.

The resetting device is a rack type geared handled bar which forces over the armature bar on the annunciator magnets. In the solenoid reset type the solenoid draws the bar over and resets the board the same way as it is done manually.

The resistance of the following apparatus on the board is given to enable one to order replacements etc.

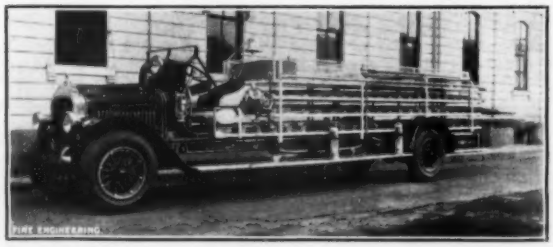
Bulls eye light—15 watts each.
Annunciator magnets—80 ohms per pair.
Tapper magnets—40 ohms per pair.
Annunciator switch resistance—100 ohms.
Relay main line type—30 ohms.

Specifications for gong and joker boards are given in the last part of this article and are taken from specifications now in use. In ordering a new gong or joker boards these specifications can be used.

Wiring on the Back of the Switchboards

Our line comes from the protector board, positive side, to the tap bell switch contact and on to the tapper passing through the tapper and back to the opposite tapper switch contact. If the switch is on the circuit it continues on through the switch and down to the instrument jack passing through the jack and to the proper switch on the transmitter transfer switch. The route of the circuit from here is dependent on the position of the transfer switch. For descriptive purposes we will assume that the switch is resting on the right hand contacts. The circuit now

(*Continued on page 957*)



Another Maxim Apparatus for Watertown, Mass.

The ladder truck illustrated which was exhibited at the New England Fire Chiefs' Convention at Manchester, N. H., by the Maxim Motor Company, has been delivered to Chief O'Hearn of Watertown, Mass. This is the latest type double bank ladder truck, and with the installation of this piece of apparatus, it makes the fourth Maxim apparatus that has been purchased by Watertown since October, 1915.

WITH THE EDITOR

Winning an Increase

On December 1st of this year the members of the Portland, Oregon, Fire Department will receive practically a 20% increase in salary.

This simple little statement, however, does not tell the great fight the boys out in Portland put up to secure this increase. In its fight for the increase the firemen were aided by the police department, whose members were also after an increase.

But to give an idea of the comprehensiveness of the campaign the following details are given: 100,000 pamphlets were printed and distributed by members of both departments throughout the city; 250 cloth signs and 165 posters were displayed; resolutions and letters from the city council twice, to the number of 80,000 each, were printed and distributed; 140 slides were made and booked for all theatres; 4,000 large window cards were placed on display at the various business houses; 70,000 dodgers were distributed through laundries, bakeries and mills; 45,000 windshield stickers found a place readily on the average auto; 4 windows were arranged also for fire displays in downtown districts; 40 speakers made the public aware of the fact that salaries were inadequate.

In view of this very energetic campaign it is not surprising that the boys at Portland won their salary raise. Maybe a lot of other departments could take a lesson from Portland on how to go about awakening the public to the inadequacy of the average salary paid fire department members.

Fire Prevention Week

On October 3rd to the 9th will be observed the Annual Fire Prevention Week. This "week" is an institution of the National Fire Waste Council, which is under the sponsorship of the Chamber of Commerce of the United States. This year the observation of the "week" will be carried out on a larger scale and greater co-operation is being found on all sides. Nevertheless the annual fire loss of this country is gradually growing. Either the work of the National Fire Waste Council is not producing results or else industry is developing hazardous materials and operations at a greater pace than fire prevention measures can be enacted to counteract them.

It has occasionally been remarked that there is a lack of sincerity in the manner in which co-operating bodies work with the National Fire Waste Council. Whether this is so or not, it would be hard to assert.

However there is little doubt but what the fullest co-operation is not being received from fire fighting forces.

This is not surprising. When an organization not experienced in fire fighting methods or not intimately in contact with fire prevention practices takes upon itself to do work which is normally the function of fire fighting forces, there is bound to be lack of harmony or at least indifference on the part of the more experienced party. With the rapidly increasing strength of the International Association of Fire Engineers, and the energetic manner in which it has now taken upon itself the tasks normally expected of it, it is likely that it will not be long until this big organization of fire department heads will take the bit in its teeth and put over its own fire loss reduction program. It would not be at all surprising if during the next few years this live organization assumed leadership and full responsibility for fire loss reduction campaigns. Furthermore, there is no doubt whatever that real results would be accomplished.

The association, constituted of men who are leaders in the field of fire fighting and fire prevention, could work out its own methods of handling the problem and could properly instruct its members so that they would be fitted to carry out their own local programs in a most effective and result-producing manner.

Big things cannot be accomplished over night and all big movements start small. Plans which the International Association of Fire Engineers now has under consideration may grow to such proportions as to surprise the entire nation.

After all is said and done, it is the function of the International Association of Fire Engineers to head such movements and with the facilities which it is hoped will soon be made available, great things may be expected.

Politics at Its Worst

If press reports are to be believed rarely have such brazen attempts been made by politicians in power to utilize city employees both in canvassing for votes and in providing money for campaign expenses as have taken place at St. Louis, Missouri, during the week preceding the recent primary election.

Of all departments, probably the fire department was called upon to do the greatest amount of work.

Members of the fire department, who are normally exempt from political requirements, were regimented for the first time in ward and precinct service. "Invitations," which were in reality commands to attend meetings held for lining up the city employees for voting, were sent to the firemen by postal card. The postal cards were numbered and admission to the meeting was by card so that the ward managers knew who did not

attend. The men had previously been card indexed by wards and precincts. In each case the speaker at these meetings urged loyalty to the present administration and pointed out reasons why the present administration should be reelected.

Precinct canvassing work was assigned to various employees including firemen. The fire department, which has more than 900 members, includes many of the political party not in power. No exemption was granted to these, in the general summons to the ward conferences, and the announcement that the employees were expected to support the mayor's candidates. City employees were being assessed on a 10% of a month's pay basis. In addition much more active work was expected of the employees than ever before in the history of the city.

It is not at all surprising that politics is played in this manner at St. Louis. The reputation of the city in that respect is well known.

But it is not what the city has done at this past election that should draw the attention of the entire fire fighting fraternity in this country at the present time but what it will do in future elections. If it has stooped to the low practices followed prior to the last primary, it may well be expected to even go a little further at the next election if steps are not promptly taken to check the practice by bringing it prominently before influential bodies in the city and the state as well.

Protection afforded by civil service to members of the fire department is not complete until they are placed in a position where they need not respond to the demand of politicians either for funds or work in canvassing for the reelection of city officials.

St. Louis is one of the few large cities in this country where the city politicians dare to tax the employees of a fire department for campaign purposes or to require their services in any manner whatsoever. Most of the modern fire departments absolutely prohibit electioneering by members entirely, and protect the men against having to make contributions for political purposes.

What kind of discipline can be expected in a department where some men work vigorously for the political party which has possession of the city and thereby gain the favor of that party? Would the chief of such a department dare bring charges against a "pet" of the administration?

Here is a task ahead for the various fire department organizations to undertake. A vigorous assault by these associations against the methods employed at St. Louis, if not entirely eliminating the political practices there, would surely ameliorate conditions insofar as the members of the fire force are concerned.

Milford, Conn., Department to Expand

A number of improvements are planned to better the fire department in Milford, Conn. The board of fire commissioners are planning to erect a new fire station and to install a new ten-circuit fire alarm system. In addition the board will purchase a new 400-gallon rotary pumper, 2,000 feet of double jacket hose and a quantity of chemical hose.

HERBERT HOOVER WILL BE AT NEW ORLEANS CONVENTION

Secretary of Commerce Herbert Hoover has given positive assurance that he will attend the New Orleans Convention of the International Association of Fire Engineers, according to advices from Jay W. Stevens. Mr. Hoover will be the guest of honor at the banquet on the evening of October 20.

FINAL ARRANGEMENTS PERFECTED FOR COMING CHIEFS' CONVENTION

Detailed Announcement by the Secretary of the I. A. F. E.—Excellent List of Papers to be Presented

THE following bulletin, giving some important information as to the plans for the coming convention of the International Association of Fire Engineers, has just been issued by the Secretary, Chief James J. Mulcahey, of Yonkers, N. Y. It will be noted that a particularly fine list of papers to be read at the the convention is announced, covering a wide range of important subjects in fire-fighting and fire prevention, and in each case to be presented by men who are well fitted to treat the subjects which they will handle. Provision is also made for ample round table discussion by the members present.

September 10, 1926

The 54th Annual Convention of the I. A. F. E. to be held at New Orleans, October 19-22, inclusive, will unquestionably be one of the most important in its history. With several matters vitally concerning the future of the organization to be taken up, a full attendance is absolutely essential.

Herbert Hoover and Other Notables Invited

Some of the country's outstanding figures such as Secretary of Commerce Herbert Hoover, and the heads of the International Rotary, Kiwanis, Lions and other leading organizations, have been invited to attend a special meeting and banquet to be held in their honor on the second day of the convention, and several have already promised to be on hand. To get these people to endorse the association's proposed fire prevention plans will in itself be one of the greatest steps ahead, but in order to win their cooperation we will have to show that we mean business, and that we are big enough, and have the organized strength to effectively carry out our plans. This again emphasizes the importance of having a large attendance if we are to make any kind of an impression on these men who can be of such tremendous assistance. It's our grand opportunity—let's all help to make the most of it.

The Convention Program

While Chief John M. Evans and the local committee of New Orleans are preparing to elaborately entertain the visitors, the program this year will give more time to the business of the convention in view of the many important matters to be taken up. The mornings and afternoons will be devoted entirely to the business sessions, and the evenings to the entertainment features. The second day, October 20th, will be given over to exhibits, tests and demonstrations, and the officers will have a meeting and luncheon for Herbert Hoover and the other invited guests, with a banquet in their honor in the evening for all the delegates.

Topics to be Discussed

The papers to be presented at the Convention were carefully selected by the officers and embrace subjects of unusual interest

(*Continued on page* 953)

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Nozzle Pressure Less than Engine Pressure

To the Editor:

We have an argument under way here and which we would like to have settled by an answer in FIRE ENGINEERING, in your Questions and Answers column.

"A" says that a pumper with 160 pounds pump pressure, 300 feet of 2½ inch fire hose, using a ⅞ inch tip, will gauge at the tip a pressure of 215 pounds.

"B" states that it is impossible to have a greater nozzle pressure than the pressure at the pump; or in other words pump pressure or hydrant of 160 pounds, per square inch using 300 feet of 2½ inch hose must be greater than the nozzle pressure. This is due to friction in the fire hose. "B" further states that "A" was mistaken in either his pump pressure or his nozzle pressure, or he had some gauge trouble.

"B" still insists that the nozzle pressure will always be less than the hydrant or pump pressures, regardless of what length of line or what size tip is employed.

Sincerely yours,
J. K. H. Philadelphia, Pa.
Aug. 9, 1926.

Answer: There is only one condition under which "A" would be correct and that is where the nozzle is a great deal lower than the engine. In other words, if the engine were placed on a hill and the line of hose stretched down the hill to the nozzle, then there would be a possibility that the nozzle pressure would be greater than the engine pressure.

But as it is ordinarily assumed, where no inclinations are noted, that the engine and nozzle are at the same level, "A" is wrong.

The nozzle pressure will be less than the engine pressure in all cases, due to the fact that there is a loss of pressure in the hose line as a result of friction. Just how much this loss would be depends upon the rate of flow through the line of hose, which in turn is regulated by the size of tip and the engine pressure.

Under the conditions assumed, and not otherwise stated, "A" is in error and "B" is correct.

Dry Powder "Extinguishers"

To the Editor:

I am very anxious to learn something of the chemical action of some of the powder extinguishers that are now on the market, and also to secure a formula for such a powder and would appreciate any information that you may be able to send me.

Perhaps a few questions will give you a better idea of what I want.

1. Does the powder form some kind of a gas when it comes in contact with fire heat, and if so, what is the chemical name for the gas so formed?

2. If it forms gas, it is presumed that this gas forms a sort of spreading blanket that settles over the fire, cutting off the oxygen and in this way smothers the flames. Is this correct?

3. Do extremely hot air currents formed by flames have a tendency to carry off the powdered forms of extinguishers?

4. Would powders be effective where there is wind fanning the fire.?

If you can give me the information requested in the above questions and tell me anything else about the powder form you will greatly oblige,

Yours very truly, P. B. W. Winston Salem, N. C., Aug. 14, 1926.

Answer: Practically all of the dry powder extinguishers on the market are made up of containers of bicarbonate of soda or some powder having bicarbonate of soda as a base.

The Underwriters Laboratories, which is the technical branch of the National Board of Fire Underwriters, does not consider dry powder "extinguishers" as fire extinguishers. In other words no credit is allowed for the protection afforded by these devices.

The writer has witnessed numerous tests of dry powder extinguishers and concurs in the opinion of the Underwriters Laboratories.

At the last New England Fire Chiefs Convention held at Manchester, N. H., dry powder extinguishers were tried on a small open tray of burning gasoline. Although extinguisher after extinguisher was emptied on an area of less than a square yard, no appreciable headway was made against the fire and it was finally extinguished with a small foam extinguisher.

Theoretically bicarbonate of soda forms carbon dioxide in small quantities when in contact with fire, but it requires heat of great intensity to release this carbone dioxide gas. Furthermore, the gas as it is released is quickly swept aside by the upward current of air created by the fire. Thus its chief effect is lost.

It would be very nice if the gas formed a blanket which rested over the fire, but such is not the case. The air around a fire is not at rest for if it were the fire would soon go out due to the exhaustion of the oxygen in the air in contact with the fire. The only thing that feeds the fire is the constant flow of fresh air up to the fire along the floor. Carbon dioxide, being slightly heavier than air sinks to the floor and is quickly carried with the rush of air up through the fire, showing but little effect in its passage.

It is the writer's opinion that powders would be ineffective on any fire except where confined to a very small closed-in area. In this case the fire would burn out anyway due to the absence of air.

If you are figuring on extinguishers to be used in connection with materials which would be damaged by even small quantities of water, it is suggested that you consider foam, carbon tetrachloride or carbon dioxide gas extinguishers. These two latter are used around electrical machinery where even a small amount of water would be extremely harmful. The carbon dioxide gas extinguishers are effective and are finding wide use in industrial application and on board ships.

Paint Factory Fire; Friction Loss, etc.

To the Editor:

Below are several questions which I would appreciate your answering for me.

Question 1. You are in charge of an engine company first to arrive at a fire in a paint factory. The fire involves a portion of the third floor. It is a six-story building with steel columns, brick walls and wooden flooring. There is an elevator shaft and stairway near the front of the building. State what actions you would take if you were in charge for ten minutes. It is in the high pressure district.

Question 2. What is the reason for the loss of pressure between the engine and nozzle?

Question 3. In the operation of a fire stream inside of a building what precautions should be taken?

Respectfully,
A. K. T. June 9, 1926,
Philadelphia, Pa.

Answer 1. The question does not state on what alarm you are answering, so it is presumed that you are answering on a still alarm. This would assume the worst condition and would show your resourcefulness. Also, the problem does not state to what extent the fire has spread.

But the nature of the building and its contents indicate the action that should be taken. The first thing to be done is to transmit a call for additional apparatus. If the fire has spread or is spreading over the entire third floor there is going to be a serious problem on your hands due not only to the fire on the third floor but its extending up the elevator shaft and stairwell as well. If there is a likelihood of fire going up the elevator shaft to the floors above then a third alarm will not bring into service too much apparatus.

Immediately after transmitting a call for help, get men to roof at once to open up over elevator shaft and stairwell. This will draw the fire upward and will prevent it spreading over

the upper floors in the event that the third floor is already involved and fire going up the shaft upon your arrival.

But assume that fire has not covered the entire third floor and that it is still within control of your facilities at hand. Ventilate by opening up over the shafts mentioned previously and immediately get lines in operation by ladders to the third floor. The openings above the shafts will draw the fire upward and opening windows through which to operate on the third floor the men can operate at close range and without discomfort.

It will be necessary to use considerable water but precautions must be taken not to cause streams to enter vessels containing oils or inflammable liquids which would spread fire in the event that they were carried by water streams over the floor and down stairways.

As it has been assumed that you are operating on a still alarm you cannot figure on more than two lines until the arrival of additional apparatus. One of these lines might be taken up the stairway to hold the fire from dropping down the elevator shaft and stairway as well as checking its spread in the stairshaft until the arrival of additional lines. The stairshafts will be needed to operate on the fire when other apparatus rolls in. The second line can be taken by ladders to third floor and operate through the windows.

No mention is made of the life hazards. If fire occurs during working hours the first thing to be taken into account is the life hazard and all attention must be given to saving life first.

With the limited apparatus with which you respond (which will probably include one engine and one ladder truck) you have quite a task on your hands. Ventilation in any case is absolutely necessary to draw the fire away from the floor area and make it possible for the men to operate and the people to get to the street by fire escapes or other than interior means.

After the assigning of the first lines arriving on the additional alarms, a superior officer will also arrive so that your task will only include transmitting of additional alarms, saving of life and getting the first lines in operation.

Answer 2. The reason that pressure is lost between the engine and a nozzle in a hose line is because of the friction of the water on the interior surface of the hose. When two substances rub together there is energy lost by friction. This applies to water rubbing on the rubber surface of the interior of hose as well as other substances rubbing together. The faster the water travels the greater the friction loss.

Although the rubber lining of hose is comparatively smooth, nevertheless there is friction. When the water in the hose is placed under pressure it causes the rubber lining to be forced into the weave of the jacket and makes a slightly roughened surface for water to flow over. This increases the friction loss over that where water flows over a smooth rubber surface without the little unevennesses.

Answer 3. In the operation of a fire stream inside of a building the following precautions should be taken: So direct the stream that it will not damage material such as glass ware, crockery, etc. Keep stream out of vessels containing inflammable liquids. Water entering such containers will displace the oils and cause them to flow over the surface of the floor or down stairways spreading the fire.

Do not operate stream until the base of the fire is seen. Shut off stream when fire is under control, to avoid unnecessary water damage; take care that the stream is hitting the fire and not passing on through the building by way of windows or open doors; take care that stream is not directed toward men entering the building from other side; do not direct streams at materials which will increase the intensity of the fire, such as lime, calcium carbide, etc.; keep streams out of vats of burning oils or molten materials to avoid spreading of fire through sputtering of these materials.

Labeling Fire Extinguishers

Captain Babcock of the Nyack Fire Patrol has submitted the query of, "Why is it that 'valve in the head' type 2½-gallon chemical extinguishers do not bear the Underwriters' label?"

It has been suggested to him that the reason is because this type is not considered best for use in buildings, and they are supposed to be for fire department apparatus only. The following letter from the Underwriters' Laboratories on this question may prove illuminating:

To the Editor:

Referring to past correspondence brought up by Captain Babcock of the Nyack Fire Patrol, the situation is about as follows:

We have on our listing at present, no extinguishers which could be properly called of the Fire Department type, not because there is any particular objection to our listing and labeling such equipment, providing it is properly made up, but perhaps chiefly because manufacturers have not seen fit to submit for subsequent listing, extinguishers which we thought would conform to such requirements as should be made for Fire Department equipment.

There have been a few extinguishers submitted I believe in the past, which were supposed to be intended for Fire Department use, but which embodied more of an inventor's or manufacturer's idea of what a Fire Department ought to use rather than what seemed to be the proper construction for extinguishers of this class. We do not have many inquiries about listing of Fire Department extinguishers, perhaps because individual Fire Departments often conduct their own tests and make their own specifications for devices of that kind.

If, however, there seems to be a desire on the part of those concerned, to have the Laboratories investigate and list fire extinguishers which are found, on test, to be properly constructed for Fire Department service, we will be glad to accept applications from submitters as we do for other equipments, and invite the cooperation of Fire Departments on establishing requirements for this particular class.

It may be found desirable, after investigation, to do as Captain Babcock has suggested, mark such extinguishers for Fire Department use only, if it appears they should not be considered suitable for general use.

Yours very truly,
H. L. PAGETT
Associate Engineer, Gases and Oils.

Friction Loss in Chemical Hose

To the Editor

Below are several questions which I would appreciate having you answer.

A chemical tank has a pressure of 150 pounds (This is a 40 gallon tank). There is 250 feet of ¾ inch hose, equipped with ¾ inch nozzle. What is the nozzle pressure? What is the friction loss? How many gallons are flowing per minute?

Thanking you in advance I remain,
Sincerely,
F. C. May 2, 1926.
Boston, Mass.

Answer: The method of solving the above problem is as follows: Change the 250 feet of ¾ inch hose into 2½ inch hose. This is done by using the conversion factor for changing ¾ inch hose to 2½ inch hose which is 0.0029. Dividing 250 by 0.0029 we get 86,207 feet of 2½ inch hose. In other words from a friction standpoint the 250 feet ¾ inch hose is the same as 86,207 feet of 2½ inch hose.

Now before you can solve this problem by the Underwriters' Formula we must find the value of K used in the formula. This is found by multiplying ⅜ x ⅜ x ⅜ x ⅜ and dividing by 10 which gives 0.00198.

The formula for finding nozzle pressure is: Nozzle Pressure $= \frac{\text{E. P.}}{\text{1.1 plus K x L}}$. Where E. P. is engine pressure, K is the factor as found in the preceding paragraph and L is the number of 50 foot lengths of hose in the line.

E. P. is 150 pounds as given in the problem.

K, as solved above is 0.00198 and L is found by dividing 86,207 by 50 or is 1,724.

Nozzle pressure then equals 150 divided by (1.1 plus 3.413); or 150 divided by 4.513, or 34 pounds per square inch.

This is the pressure at the nozzle when the pressure in the tank is 150 pounds.

The flow is found by the usual formula, namely, flow $= 29.7d \times d \times \sqrt{\text{Pressure}}$.

D is the diameter of the nozzle and is ⅜ inches. The pressure is 34 pounds, and the square root of the pressure would therefore be 5.83.

The flow then solves out as follows: Flow equals 29.7 × ⅜ × ⅜ × 5.83, or 24.3 gallons per minute.

The friction loss is equal to the engine pressure minus the nozzle pressure or 150 minus 34, giving a friction loss of 116 pounds.

It might also be added that the 150 pounds in the chemical tank would probably exist for but a minute or so and would drop rapidly as the fluid in the tank was expelled. In other words 150 pounds is taken as the starting pressure which diminishes rapidly as the solution in the tank is forced out.

As long as the pressure is 150 pounds in the tank the flow will continue to be 24.3 gallons per minute, but just as soon as the pressure drops, then the flow too drops.

Butte, Mont., Has Relief Association—The Fire Department Relief Association has been formed in Butte, Mont., to handle the $103,000 which has accumulated in the disability fund.

Massachusetts Firemen Meet at Fall River

Chief Jeremiah F. Sullivan, of the Fall River Fire Department, was unanimously elected president of the Massachusetts State Firemen's Association at the closing session of the 47th annual convention in Elks' hall, Fall River. Other officers were chosen as follows: Joseph J. King, of Lawrence, first vice-president; Capt. J. McNamara, of Swampscott, second vice-president; Daniel J. Looney, of Boston, secretary; and M. Joseph Manning, of Milton, treasurer.

Chief J. F. Sullivan, President M. F. A., Fall River.

Henry Hilton, of Gloucester; James O'Grady, of Holyoke; and Capt. William F. Thomas, of Worcester, were elected to the board of directors.

Chief F. O. Whitmarsh, of Braintree, was appointed sergeant at arms and Edward J. Coveney, of Boston, was reelected as commissioner for the $18,000 firemen's relief fund.

The convention was called to order in the Elks' Hall, Fall River, by Chief Homer R. Marchant, of Gloucester, retiring president of the association.

Addresses of welcome were delivered by Mayor E. P. Talbot and Chief Jeremiah F. Sullivan, of Fall River, and by Fire Commissioner Timothy Regan. Capt. Drohan, of the Fall River fire department, spoke briefly and invited the delegates to visit the home of Fall River Council No. 86, Knights of Columbus.

Chief William H. Mahoney, of Peabody, responded to the addresses of welcome in behalf of the association.

An invitation was received from the Chamber of Commerce of Springfield to hold next year's convention in that city. The matter was referred to the board of directors.

John Deegan, of Boston, and Henry Hilton, of Gloucester, were appointed as committee on credentials.

Secretary's Report

Secretary Daniel J. Looney, of Boston, in his annual report, gave the membership total as 8,930 firemen with 80 cities and towns represented. He called attention to a gratifying increase in the membership. His report was as follows:

To the Officers and Members of the Massachusetts State Firemen's Association:

Gentlemen: I, as secretary for the 47th year of this association, have the pleasure to report that a splendid gain and advancement in every respect has been achieved during the fiscal year ending August 31, 1926.

The total membership, consisting of those who have paid at least once in the preceeding two years, is 8,930.

The dues received by the secretary during the fiscal year ending August 31, 1926, amounted to $7,954.00, being the largest amount ever collected in one year in the history of this association.

The secretary feels that it is his duty to report that President Marchant held regular monthly meetings of the board of directors and special meetings of the legislative committee, and a quorum was present at each meeting to take care of the interests of your association.

The dues being only $1 a year are small enough so that no fireman can have that as an excuse for not being a member. For that reason he cannot expect 100 per cent service without assisting himself to receive it.

The many other splendid accomplishments of this association during the past year may be found in the report of the board of directors.

The secretary is deeply appreciative of the splendid support given him in every way in the discharge of his duties and extends his most hearty thanks for the same to the officers and members of the association.

Respectfully submitted,

DANIEL J. LOONEY, Secretary.

Edward J. Coveney, of Boston, reporting as commissioner of the $18,000 Firemen's Relief Fund reported expenditures of $13,015.50 during the year for injury and children's benefits. There were 12 deaths of firemen from injuries received in the line of duty and 32 children of firemen are now being cared for by the association.

M. J. McGonagle reported for the legislative committee. There was a large attendance at the opening session. In the evening a dance was held in the Irish-American Hall.

Resolutions Passed

Resolutions were adopted protesting against the suspension of firemen when under charges for auto violations on days off until found guilty. The following resolution relating to salvage work was proposed by Chief W. H. Mahoney, of Peabody, and adopted by the associations:

"Whereas the doing of salvage work at fires is endorsed by the members of this association, but whereas the doing of this work as recommended by the National Board of Fire Underwriters as a part of regular fire department duty is opposed, therefore be it resolved that the Massachusetts State Firemen's Association favors the enactment of legislation which will provide for all companies placing insurance in this state to pay a percentage of all premiums collected to pay for the maintenance of salvage work in every municipality."

The speakers on the second day's program were Harold O. Cook, of the State Department of Conservation; Thomas F. Sullivan, chairman of the Boston Transit Commission; Timothy C. Murphy, of the Division of Fire Prevention of the State Department of Public Safety; Ex-Fire Commissioner Theodore A. Glynn, of Boston; and Col. W. A. McIntyre, of the Salvation Army. The memorial address was given by the Rev. Charles A. Donovan, of St Lukes' Home.

Mrs. Mary E. Jones, of Newton, was reelected president of the Ladies' Auxiliary of the association.

There was a baseball game between the Medford and Fall River fire department teams. Fall River won by the score of 12 to 7. A nine act vaudeville show was held at Anawan hall on the second evening of the convention.

The delegates attended a clambake in Lincoln as the concluding feature of the convention.

The convention was largely attended and proved one of the most successful ever held by the association.

HARRY BELKNAP.

Chief Armstrong and Family in Smash-up

While Chief James Armstrong of Kingston, Ont., was enroute with his family in their automobile to attend the convention of the Dominion Fire Chiefs, the party just missed having a very serious accident. The following paragraph which is an excerpt from a letter from Chief Armstrong, describes the incident:

"I have just returned from our Dominion Convention and am mighty tired. We had a serious accident while enroute. With the wife, two daughters and one of our sons we left home on Sunday morning (22nd) about 3:45, and when about 130 miles from home and descending a long grade, we were run into from behind by a heavy truck and knocked into a ditch. The car was damaged to an extent of about $450. One of the daughters was thrown out and knocked unconscious and had a bad scalp wound that required four stitches, and another a bad cut on the leg below the knee. The wife had a bad bruise on the top of the head and the other daughter as well as all were badly shaken up and the three of them are covered with bruises. I was sitting in the front seat with the son driving and was thrown against the wind shield. I hurt my chest and on the rebound struck the back of the seat and hurt my shoulder blades and back. The boy escaped with only the shock. We were able to take the train for Windsor leaving the remains of the car at a garage in the City of Oshawa which was about a mile and a half west of where the accident happened. Needless for me to say that I was in a pretty nervous state all through the convention and since I came home I have been resting up most of the time. It is God's blessing that we were not all killed as the ditch was over 6 feet deep and we were 60 feet from where we left the road until the car had stopped. The matter is in the hands of the lawyers now."

Chief Dower of Charleston Navy Yard, Dead—Chief W. J. Dower of the Charlestown Navy Yard, at Charlestown, Mass., died recently. Funeral services were held from the St. Francis De Sales Church on Monday, September 20, and was attended by representatives of the Fire Chiefs' Club of Massachusetts of which he was a member.

Cleveland, O., Opens Fire Alarm Headquarters—Safety Director Barry and Chief George Wallace in company with other city officials have opened up the new $200,000 fire alarm station in Cleveland, Ohio. The grounds about the building will be landscaped, and it is planned to make the station one of the show places in the city.

Kansas Firemen and Chiefs to Meet

The conventions of the Kansas State Association of Fire Chiefs, and the Kansas State Firemen's Association will be held in Manhattan, Kans., September 27-29. A joint meeting of the two associations has been arranged for the afternoon of September 28. The programs that have been arranged by the two organizations follows:

Monday, September 27—10th Annual Meeting
Kansas State Association of Fire Chiefs

10:00 A.M.—Address of Welcome, Mayor C. Johnson
—Response, Judge Geo. L. Light, Liberal
—Address, Bernard Uhlrich, Supt. W. W.
—Music, Orchestra
—President's Address, Otto Geisler, Leavenworth
—Round Table
1:30 P.M.—Address, W. R. Baker, Supt. of Insurance
—"Salvage Works of the Fire Department", Chief W. A. Buel, Parsons
—Address, Judge Geo. L. Light, Liberal
—"Progress in Standardization", Mr. L. G. Gilson, K. I. Bureau
—Round Table, (Bring up Anything You Want)
—Reading of Reports
—Election of Officers
—Adjournment
8:00 P.M.—Picture Show at Marshall Theatre
9:00 P.M.—Dance at Community House

Tuesday, September 28—39th Annual Meeting
Kansas State Firemen's Association

9:00 A.M.—Address of Welcome, Mr. E. E. Ames, Secretary C. of C.
—Response, D. J. Rayburn, El Dorado
—President's Address, W. B. Higgins, Solomon
—Appointment of Committees
—Address, W. A. Elstun, State Fire Marshal
—"Why Pass the Buck", C. F. Price, Oakley
—"The Common Citizen a Menace to Himself and the Fire Department", Chas. A. David, Madison
—Round Table Discussion
11:30 A.M.—Adjourn to Masonic Temple for Picture
12:00 M.—Special Dinner for Visiting Ladies at Gillett Hotel—Guests of Manhattan F. D.
1:30 P.M.—Drive for Visiting Ladies to Eureka Lake, I.O.O.F. Home and Ft. Riley

K.S.F.A.—K.S.A. of F.C.—Joint Meeting

1:15 P.M.—"Underwriters' Laboratories' Service to Fire Fighters", Mr. M. M. Brandon, Service Engineer, Chicago, Ill.
—"Present Day Fire Dept. Troubles", Clarence Goldsmith, Chicago, Ill.
Adjourn to City Park where there will be demonstrations of Pumpers, Extinguishers and other equipment.

Wednesday, Sept. 29, Kansas State Firemen's Association

9:00 A.M.—Election of Officers
—Selection of Next Place of Meeting
—"Proper Motor Lubrication", Mr. H. B. Lamson, Engineer Vacuum Oil Co. (Illustrated with Slides)
—Moving Picture, The Buffalo Convention, (Courtesy Seagrave Co.)
—Moving Picture, The Ludlow Hydrants, (Courtesy Ludlow Co.)
1:00 P.M.—Drive to Rocky Ford, Water Works Plant and Kansas State Agricultural College
6:00 P.M.—Banquet at Masonic Temple
8:30 P.M.—Boxing Match at Community House

Philadelphia Battalion Chief Dead

After an illness of several months that was aggravated by heart trouble, Battalion Chief Hugh Colgan of the tenth battalion, in Philadelphia, Pa., died at his home at the age of seventy. When a young man he worked as a stone cutter and later joined the fire department in September 1884 as a hoseman. After eleven years he was promoted to foreman, a position that is now known as captain. Because of ill health, he was transferred to an outlying company, and when he had recuperated, he was promoted to district engineer. When the city adopted the present plan of having battalion chiefs, Colgan became chief of the battalion.

Chief Colgan is survived by a widow and one son.

Another Fire-Fighting Film

The observance of Fire Prevention Week this year will be marked by the showing of a two reel motion picture "Fortify for Fire Fighting" that was made under the auspices of the Fire Equipment Manufacturers Institute. By this and other means, the American public will be directed to ways of safety. This film should not be confused with the number of films that have been placed on the market to compete with the one that is being made with the cooperation of the International Association of Fire Engineers—"Fortify for Fire Fighting" is an educational picture but told with all the gripping melodrama that holds a Broadway audience.

The institute has felt that there is need for a vehicle like this to spread the gospel of fire protection. This is the fifth consecutive year according to the National Board of Fire Underwriters that the annual fire loss has exceeded the half billion dollar mark and is indicative for the need of effective measures. By the use of fire protective equipment shown by the institute, it is claimed that at least seventy-five per cent of the fires can be avoided.

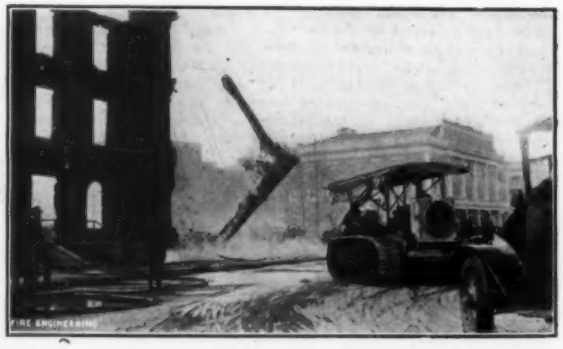
The film, "Fortify for Fire Fighting," does not duplicate past efforts to stress the advantage of concrete and other fire-proof prevention material. Neither does it specialize in the subject of fire insurance. Both of these play an important part in safeguarding America against the dread scourge. But the F.E.M.I. picture of two reels handles the subject from a new and convincing angle.

Organizations in addition to the Fire Equipment Manufacturers Institute which will fully co-operate for the same objectives are the Chamber of Commerce of the United States with 1,400 local units, the United States Department of Agriculture, the United States Bureau of Education, the National Board of Fire Underwriters, the American Red Cross, the National Fire Protection Association, the National Association of Insurance Agents, the National Association of Credit Men, the Fire Marshals' Association of North America, the International Association of Fire Engineers and the national organizations of the Boy and Girl Scouts, Rotary, Kiwanis and Lions Clubs.

Information in respect to release dates and other particulars of the "Fortify for Fire Fighting" movie film may be obtained from Mr. D. S. Hunter, Secretary of the Fire Equipment Manufacturers Institute.

"Calibre of Fire Streams" Issued

An interesting forty-eight page booklet which describes the characteristics of fire streams and which gives many valuable tables on fire streams has been compiled by Charles H. Fox, and is being distributed by the Ahrens-Fox Fire Engine Company. It is presented gratis by the company to officials and firemen who are interested in acquiring information concerning the fundamental principles of fire stream practice.



Caterpillar Tractor Clears Fire Ruins

When it became necessary to clear away the debris and ruins of the disastrous Riverside Hotel fire at Reno, Nevada, the caterpillar tractor illustrated furnished the necessary power. It is rather a novel use for an old mechanism.

C. W. GEIGER

BIG JUNK SHOP FIRE THREATENS ENTIRE BUSINESS DISTRICT IN CITY

Assistance Rushed to Central Falls, R. I., from Pawtucket and Cumberland—Two Buildings Destroyed and Many Driven from Homes

ONLY the absence of a heavy wind, and the quick work of the firemen of Central Falls, R. I., under the leadership of Chief Robert Browning, and the assistance of the firemen from Pawtucket and Cumberland, prevented a conflagration in the East Side business section of the former city.

Chief Hobert Browning, Central Falls, R. I.

The fire started in a rag pile attached to a junk shop. The yard was surrounded by dwellings and was in the midst of a mercantile district, so that the fire hazard and the danger of the extension of the fire to the adjoining buildings was very great. After two fire alarms had been turned in, Chief Browning realized that he would not have enough facilities and men to cope with the fire and he immediately sent a request for aid to Pawtucket and Cumberland, R. I. The lives of many of the call and volunteer firemen were threatened by falling bricks and the danger of buckling walls.

Several of the men had narrow escapes from injury. When it was seen that one of the nearby walls was buckling, two of the firemen manned a 65-foot ladder and moved it to safety with very little time to spare. Billowing smoke from the pile of oil soaked rags covered the entire section. Often the firemen fighting the flames from nearby roofs were completely obliterated. Thirteen lines of hose were laid to the fire.

Several lunch rooms and restaurants in the section supplied the firemen with hot coffee, doughnuts and sandwiches in the early morning hours. Even after the fire was believed to be out, the men continued to pour water on the piles of rags to make sure that there was no fire in the center of the heaps.

Several acts of petty thievery were reported. When the call men and volunteers responded, they parked their cars as near the scene as possible, threw off their coats and reported to the officers for duty. When they returned, the cars were stripped of all the accessories possible and many of the coat pockets were searched for valuables.

Ruins of the Junk Shop Fire in the East Side Business District of Central Falls, R. I.

Chief Browning had a double celebration at the fire. Thirty-three years ago he responded to his first fire as a call man of the department. On the anniversary of that date, he was again called to a fire but this time as chief of the department, and the peculiar part of the incident was that he was called to the same building. The firemen were served with cool drinks at the expense of Chief Browning, as they played the hose on the burning embers.

The loss is reported at about $50,000 and six persons were reported injured as the result of the fire.

"MOVIE" SHOW IN IRISH BARN CAUSES FIRE WITH 48 DEATHS

Small Exit of Barn Blocked by Projector—Ladder Only Means of Egress—Nearest Apparatus 36 Miles Distant

THE charred bodies of forty-eight of the audience, and the injuries received by many others are the results of an attempt to stage a motion picture show in a barn in the village of Dromcolliher, Ireland. It is a repetition of the catastrophe of Babbs Switch, Okla., only the results are far more gruesome and the fire occurred under more adverse conditions.

The village is thirty-six miles from Limerick where the nearest fire apparatus is located. The hall in which the show was to be held was located in the upper floor of a wooden building. Entrance to the upper floor was gained by means of a ladder which could not bear much of an overload. The motion picture machine was placed in the hall near the means of egress with no protection whatsoever, and the reels of film were placed on a table nearby. The machine was in charge of an experienced operator, who claims that he did not want to give the show under the conditions provided for him, but that he was talked into it by the promoter of the show.

Forty-Eight Lives were Lost in this Moving Picture Fire in Ireland. Note the Complete Destruction of the Flimsy Interior.

On one end of the table on which the film was placed, was a burning candle. Somehow a reel of film caught on fire and the operator ran over and attempted to extinguish the blaze with his hands. A member of the audience who believed that he could help, ran over and thought that by fanning the flame with his cap he might extinguish it. The sudden gust of wind caused by the cap directed the flame on to the other reels, and soon the entire mass of motion picture film was on fire. The audience which was somewhat calm when the fire first started became wild and panic stricken when the entire mass of film caught on fire, and they made a mad rush for the exit. It meant running past the burning film, and although an attempt was made to have the women and children leave first, the excitement was responsible for an animal like rush in which many were trampled on and killed even before the fire had reached them. The ladder could not stand the load when the crowd tried to reach safety by its means, and it crashed to the ground cutting off the escape of those above.

Many who might have escaped lost all sense of reason and huddled up in corners or near the small barricaded windows where they were found later charred beyond recognition.

The victims were buried in a common grave, and for the first time, the two Irish governments exchanged communications when one faction extended their condolences over the terrible accident. The people were so incensed at the fire that they stormed a store owned by the owner of the building in which the show was held, and they broke the plate glass window. The only fire protection that the village had was located in the city of Limerick, thirty-six miles distant.

Will Rogers, the American comedian now in London, cabled

for the American people to aid the two hundred who were injured, and the homes that were affected by the death of the victims. A relief fund has been started by a New York paper.

SIX DEAD IN NEW YORK TENEMENT HOUSE FIRE IN COLORED DISTRICT

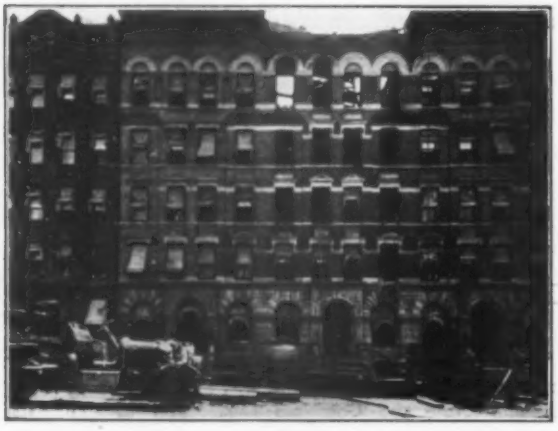
Open Trench Resulting from Subway Excavation Makes It Impossible to Raise Ladders—Three Alarms Sounded

FIRE of undetermined origin took the lives of six Negroes and destroyed the interior of a five story brick tenement at No. 420 St. Nicholas avenue, New York city, early in the morning of September 1st.

The house is one of a row known in Harlem as "Millionaire's Row" because the more prosperous colored folks reside there. It faces St. Nicholas Park and is on the westerly rim or edge of Harlem's black belt.

The front door as usual, in such a locality, was closed but not locked. The stairs were wood, covered with carpet, capped with rubber or metal holders. There were ten families in the building, numbering about 35 persons in all.

In front of the house, the City of New York is constructing its new $506,000,000 subway system. In front of this particular house, the structure below the grade of the street level was



Ruins of Fire in Colored Section of New York City

The open subway excavation in front of the building made it impossible for the fire department to raise their ladders. Six lives were lost and many were injured as they jumped from the burning building.

finished to the point at which the contractor was back filling the easterly wall of the subway structure, which necessitated an open gap along the curb line and the sidewalk for three city blocks, and in addition to the back-fill, there was also some work to be done on sewer pipe, gas mains, electric conduits, and so forth.

This condition precluded the possibility of aerial trucks gaining any working space in front of the building. The sidewalk of ordinary size had been reduced to about four or five feet, making it passable for pedestrians only. The open cut in front of the row of houses was about twenty feet wide. When added to the sidewalk width, no aerial truck could effectively use its extension ladder and reach the fourth or fifth floors.

The alarm box was pulled by William Morris, a negro, who worked as watchman for the Rosoff Subway Construction Company. He heard screams. He ran to the building and observing the main hallway aflame and fire going up the stairs, he ran three blocks away to an alarm box, although a half a block in the other direction would have been nearer. The alarm was received at 4:58 a. m.; Battalion Chief Raymond L. George responded with the first alarm apparatus. He sent in a second call which was recorded at 5:06 and nine minutes later he sounded a third alarm, bringing Deputy Chief George McKenna of the 4th Division. Twelve other boxes were pulled in the vicinity. Not because the first box had failed, but because the fire had gained such headway before being discovered that it was a torch at the time the first alarm was transmitted.

Trucks 30 and 40 arrived together, but it was not possible to raise the aerials. Lines were run into the hallway. The stairway was burned so that it could not hold the firemen. Lines were stretched up the rear fire escape and over adjoining roofs. Three of the occupants of the house jumped out the front windows, landing in the subway excavation. The others were burned to death.

Assistant Chief Joseph B. Martin, acting as Chief of Department in Chief Kenlon's absence, condemned the fact that the subway excavation had prevented ladders from being raised. On the other hand, it was admitted that, ladder or no ladder, the loss of life, excepting those who jumped out the window would have been the same. The victims were lost before the fire was even discovered.

Mayor James J. Walker ordered an exhaustive investigation. The City Board of Transportation which has control over the construction of the city's new subway system, called in all the contractors engaged in subway construction and a general conference was held. It was determined that not more than one city block at a time shall be left with an open trench, and that such open trench must be bridged, so as to allow access for fire apparatus.

A committee of engineers was appointed, equally divided between the city's staff and the contractor's staff. The Fire Department was asked to participate and Commissioner Dorman designated Chief Martin to attend a conference that was held the next day.

This is the first time in the City of New York that a subway construction excavation figured in a fatal fire. The sidewalk in front of the house afire was narrow and of a make-shift type. It is more than likely that the police patrol at that point was not up to the same standard as maintained in the colored district and it therefore seems probable that the fire was not discovered in sufficient time to permit the occupants to escape.

W. J. DALY.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending Sept. 10

RIPLEY, TENN.—Ripley Oil Mills owned by W. G. Rice..... 30
SMACKOVER, ARK.—Warehouse and offices of Smackover Provision Co. 25
CHELSEA, MASS.—Building owned by Texas Oil Company.... 65
WALLA WALLA, WASH.—Main building of State Penitentiary. 80
LELIA LAKE, TEXAS—Three business establishments and one dwelling 40
IOWA PARK, TEXAS—Business buildings destroyed..... 40
OLATHE, KANS.—Olathe Telephone Company Exchange Bldg.. 80
PORTLAND, OREG.—The Crown Mills destroyed..... 80
SARANAC LAKE, N. Y.—Saranac Lake Hotel damaged..... 50
PHILADELPHIA, PA.—Building occupied by Thompson Printing Co. 125
BRAINTREE, MASS.—High pressure still of Cities Service Corp. 65
WATERMAN, ILL.—Cunz Garage destroyed..... 25
SHENANGO, MINN.—Schoolhouse destroyed..... 35
ST. PAUL, MINN.—Plant of Griffin Wheel Company destroyed. 125
SAGINAW, MICH.—D. A. King & Son store damaged..... 25
OROVILLE, CALIF.—Fong Lee Store and surrounding property 40
JENKINTOWN, PA.—Barn on estate of Clement B. Newbold destroyed 40
SOMERVILLE, N. J.—Bonnie Brae Orphanage destroyed.... 25
COUNCIL BLUFFS, IOWA.—Barn on farm of Sam Christianson 25
ST. LOUIS, MO.—Plant of Medart Company damaged..... 60
LAKE WALES, FLA.—Packing house of Mountain Lake Corporation 30
STAMFORD, CONN.—Stamford Dye Works, almost totally destroyed 180
MIAMI, ARIZ.—Planing Mill of Inspiration Copper Company. 40
BINGHAMTON, N. Y.—Farm buildings owned by J. N. Allen, East of Willow Point..... 40
SPRINGFIELD, KY.—High school building..... 40
SHELBYVILLE, TENN.—Warehouse of Bedford Cedar Company 50
STAMFORD, TEXAS.—Property of J. S. Smith & Sons..... 30
CRESCENT MILLS, CALIF.—Business section buildings..... 260
SELMA, CALIF.—Plant of California Peach & Fig Growers Ass'n 430
PORT DALHOUSIE, ONT.—Warehouse of British Canning Factory, Leach & Jones Store..... 100
LANCASTER, PA.—Barn on farm of Martin Brubaker, Willow Street 25
SOUTH BEND, WASH.—Mill of J. A. Lewis Shingle Company destroyed 60
ANDERSON, CALIF.—Warehouse of Red River Lumber Company destroyed 50
BOSTON, MASS.—Building at 196 Marlboro Street..... 40
SHELYBYVILLE, TENN.—Musgrave Pencil Company warehouse destroyed 40

MARTINEZ, CALIF.—Buildings on ranch of Thos. McKeown.. 40
PALO ALTO, CALIF.—Masonic Temple damaged..... 65
ALFRED, MAINE.—John B. Stevens saw mill destroyed..... 40
HUGO, OKLA.—Five buildings in business section..... 65
DAVENPORT, IOWA.—Six business establishments damaged.. 175
ELIZABETH, N. J.—Jefferson Park Garage owned by John Wolf 25
OCEAN GROVE, N. J.—Buildings at 51-53 Olin Street owned by Ocean Grove Association..... 30
BUFFALO, N. Y.—Building at S. E. corner of Broadway & Fillmore Ave..... 40
ZILLAH, WASH.—Cold Storage plant of Yakima Fruit Growers' Assn..... 260
SAN FRANCISCO, CALIF.—Plant of Kitchen & Son, Oak Grove Alley..... 40
BENTON, ARK.—Dry kilns of E. A. Parker Lumber Company.. 25
FRANKFORT, KY.—Barn on farm of John Noel. McCracken & Steele Pike..... 40

Week Ending Sept. 17

SOUR LAKE, TEX.—Bakery and drug store destroyed..... 40
ATLANTA, GA.—Plant of Atlantic Ice & Coal Corp., destroyed 200
GLENNVILLE, GA.—Property of Glennville Mfg. Company and adjoining property..... 40
REGINA, SASK.—Premises of Northwest Sack Company damaged..... 80
DOUGLASS, LA.—Bradley King & Son building and two adjacent buildings..... 25
CLEVELAND, O.—Plant of Cleveland-Akron Bag Company damaged..... 175
NORTH TERRE HAUTE, IND.—Evans Lane Grain Elevator owned by Cottrell Brothers destroyed..... 40
LOS GATOS, CALIF.—Property owned by Steve Sabrovich destroyed..... 25
SUGARTOWN, PA.—Barn on farm of Wm. Evans destroyed.... 25
UKIAH, CALIF.—Menocdno County Court House damaged.... 65
SEDALIA, COL.—Car of Hagenbeck-Wallace Circus Train damaged..... 25
VANCOUVER, B. C.—Plant of Defiance Shingle Company and adjoining property..... 80
SPOKANE, WASH.—Great Northern R. R. warehouse destroyed. 30
COLLEGE POINT, L. I., N. Y.—Machine shop of College Point Dry Docks and Supply Company..... 50
SPOKANE, WASH.—Lincoln School destroyed..... 125
PINEVILLE, LA.—Residence of W. H. Bradford destroyed.... 35
GENTILLY, QUE., CANADA—Eight houses destroyed..... 70
MONTPELIER, VT.—Barns of Milo Nelson, 3 miles from here.. 25
MORGAN, TEX.—Property of Stewart & Maberry..... 25
ST. PAUL, MINN.—Residence at 1157 Summit Avenue destroyed 35
BUFFALO, N. Y.—New York Central Ice House destroyed.... 80
BIRMINGHAM, ALA.—H. Wallwork Foundry Company destroyed..... 80
MONTEAGLE, TENN.—Auditorium Building of Monteagle Assembly..... 40
SAVANNAH, GA.—Savannah Electricity & Power Company damaged..... 80
RIDGEWOOD, N. J.—Ridgewood Willar Grammar School destroyed..... 125
MT. PLEASANT, TENN.—Plant of Ruhn Chemical & Process Company..... 125
NASELLE, WASH.—Post office and general store destroyed.... 25
BRIDGEPORT, CONN.—Storehouse occupied by Bridgeport Chair Company and owned by Hoffman Coal Company..... 40
HOMER, LA.—Two blocks of buildings in business district destroyed..... 650
TOLEDO, OHIO.—Garage of Lion Dry Goods Store..... 80
CALIENTE, NEV.—Amalgamated No. 1 Mine in the Lincoln County Mining Camp..... 40
WOODLAND, CALIF.—Thirteen buildings on the McGillveray Ranch destroyed, located seven miles from Sacramento.... 80
OWEGO, N. Y.—Barns on estate of Geo. Blewer destroyed..... 50
TIOGA CENTER, N. Y.—Feed mill of U. M. Bennett & Son... 25

Program for Railway Fire Protection

The Railway Fire Protection Association will meet in New Orleans, La., from October 12 to 14, just prior to the convention of the International Association of Fire Engineers. A number of interesting papers will be presented and the full program for the meeting follows. Arrangements have been made to entertain the wives of the members who are attending the meetings.

Tuesday, October 12th, 1926.
Morning Session—10:00 O'Clock

Address of Welcome—Honorable Mayor of New Orleans, La.
Reading Minutes of Last Meeting.
Address of President.
Report of Executive Committee.
Report of Auditing Committee.
Report of Publicity Committee, W. F. Hickey, Chairman.
Address, "Spending Money to Make Men," by Mr. L. C. Bentley, General Safety Agent, Chesapeake & Ohio Railway Co.

Afternoon Session—2:00 O'Clock

Address, "How a Railroad Can Make Use of the Services of its Fire Underwriters," by Chas. N. Rambo, Manager, Railroad Insurance Association.
Report of Committee on Statistics, A. R. Savage, Chairman.
Report of Committee on Storage of Records, A. D. Brooks, Chairman.
Report of Committee on Motor Transportation—Passenger and Local Shipments, Geo. H. Scott, Chairman.
Report of Committee on Revision of Fuel Oil, 1919, E. J. Tallichet, Chairman.
Report of Committee on Fuel Oil on Water, W. F. Steffens, Chairman.
Report of Committee on Pyroxylin Lacquers, DeWitt Rapalje, Chairman.

Wednesday, October 13th, 1926
10:00 O'Clock A. M.

Address, "The Human Element in Fire Prevention," Robert Scott, Director, Department of Insurance and Safety, A. C. L. Railroad Company.
Open discussion of Field Practice on Fire Prevention and Protection, directed by G. S. Giles.

Afternoon Session—2:00 O'Clock

Continuation of discussion of Field Practice on Fire Prevention and Protection, directed by G. S. Giles.

Thursday, October 14th, 1926
9:00 A. M.—Sharp

Report of Committee on Hazards Growing Out of the Use and Operation of Acetylene Apparatus on Railroad Property, E. R. Cott, Chairman.
Report of Committee on Hazards Surrounding the Handling, Transportation and Storage of Cotton by Railroads, E. Williamson, Chairman.
New Business.
Report of Nominating Committee and Election of Officers.
Adjournment.

Firemen Forced into Political Work

The firemen of St. Louis, Mo., in connection with the other city employees have been put to work campaigning and working for candidates of Mayor Miller in the city primary election. The members of the fire department have, in many instances, been exempt from the task of working for the political machine then in power, but the present administration has forgotten the precedents established by previous political heads.

The workers have been organized into districts and an invitation to attend any of the political meetings is as good as a command. The fire department consists of nine hundred members, some of whom are supporters of the opposing faction, but no exemptions are permitted. They are being assessed ten per cent of the monthly salary as a tax for the support of the campaign.

New Fire Film Being Exploited

Chief James Armstrong, president of the I. A. F. E., is in receipt of a communication from the Universal Film Exchange of New Orleans, La., asking for permission to show a fire prevention film at the coming convention of the association at New Orleans. The film is not the one being produced under the auspices of the association, and it attempts to teach the lesson of fire prevention in ten episodes, four of which are finished.

Permission to show the film at the convention was refused because the picture of the association, "The Fire Brigade" will be shown to the delegates at that time. However, the matter will be brought up for discussion at the October meeting of the directors of the International Association of Fire Engineers.

Ex-Chief of Davenport Takes Life

Because of ill health and despondent over his physical condition, Peter Gilloley, formerly chief of the fire department at Davenport, Ia., shot himself through the head at his home.

He was a life long resident of Davenport and was born on October 1, 1858. Mr. Gilloley was chief of the fire department from 1890 to 1900, and retired in order to manage several properties that he owned in the city. He is survived by a widow, one son and four brothers.

State Fire Department Aid

When a fire department has been in existence in Minnesota for one year it may file a certificate setting forth that fact on or before October 31, with the state insurance department. The name of the municipality is thereupon placed on file, and after the fire insurance companies have all paid the tax of two per cent of their fire insurance premiums collected in the village, the state treasurer sends a check for the amount to the Firemen's Relief Association, if there is one, or to a city official.

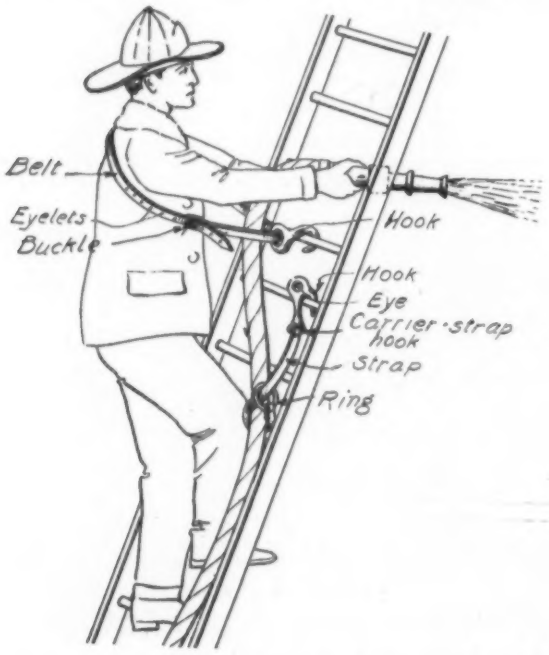
Recent Patents

Descriptions of Patents Recently Issued of Interest to Fire Departments—Automatic Fire Extinguisher—Ladder, Hose and Body Strap

Ladder, Hose and Body Strap

A design of a hose, ladder and body strap has been patented (No. 1,592,556) by Michael Canaan, Jr., of Hamilton, Ohio. The object of the design is to provide a body support for the firemen on a ladder directing a hose stream. While holding the ladder with one hand, it is possible to lift the hose to a new position.

The illustration shows the device in perspective. A leather belt is provided with a buckle, the tongue of which will engage



any one of a series of holes formed in the other portion of the belt so as to contract or expand the loop of the belt to suit the conditions of the wearer. From the belt, there is suspended a hook having an eye through which the belt passes to permit the hook to slide into the position necessary.

The hose carrier portion consists of a strap provided at one end with a ring, and at the other end with an eye at the terminal end of the hook shank to receive the strap. It is also made to receive the hook part of the body belt when the hose is to be carried.

In use, the strap is passed around the hose and through the ring that the hose will be held in the loop formed. The body belt, placed about the shoulders and body of the fireman, will have its hook so that the hose will be suspended from the shoulder and body of the fireman. This is so that he may carry the hose, and will permit the free use of his hands. When the elevation is reached, the fireman will engage the hooks of the hose carrier strap with one of the rungs of the ladder so that the weight of the hose will be supported by the ladder.

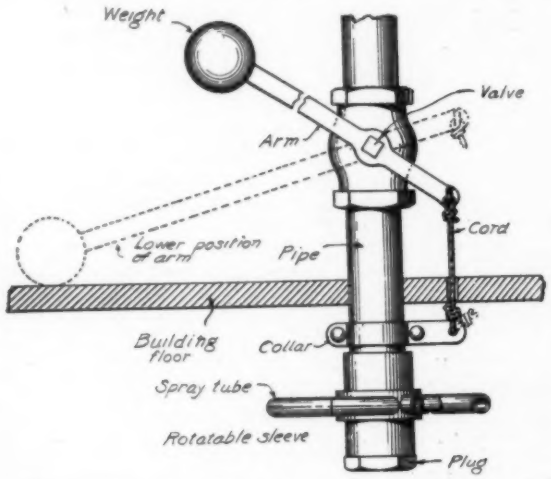
If the hose position is to be lowered or raised, the fireman will disengage the hook from the ladder rung, and secure it in the new position. When not in actual use, the hose-carrying strap, will hang from the side of the fireman suspended from the cooperating hook of the belt supported from the shoulder of the fireman so that is in readiness for connection to the hose when needed.

Automatic Fire Extinguisher

A patent (No. 1,594,321) has been granted to Mathew Green Norman of Wewoka, Okla., for his design of an automatic fire extinguisher designed so that a stream of water could penetrate into a room when the heat within the room reached a predetermined degree.

A vertical pipe passes through the ceiling or other part of a building. The lower end of the pipe is closed by a plug while slots are provided in the pipe. A rotatable sleeve carrying a number of radially disposed longitudinally curved spray tubes, into which water from the pipe can flow, is mounted so that it is able to rotate.

Arranged within the pipe at a point above the floor is a rotatable valve to the other end of the arm upon which a weight is mounted. A collar is connected with the pipe and includes a lateral extension. A cord is connected with the inner end of the arm and with the extension to hold the arm in an



elevated position where the valve will be disposed in close position.

The cord upon being burned, permits the weighted arm to fall to the position indicated by the dotted lines, and the valve is opened. Water passing through the pipe discharges through the slots and passes through the longitudinally curved tubes on the rotatable sleeve. This causes the device to rotate and discharge the water within the radius of a circle.

N. Y. Firemen Killed by Foul Air

Fire Commissioner Dorman of New York has denied the request of the District Attorney of Queens County, a suburb, within the corporate limits of New York, for the use of a fireman to descend to the bottom of a cesspool, to obtain samples or extracts of its solid and liquid contents for experimental purposes.

The cesspool is located in Bayside, a small country hamlet on Long Island. On the afternoon of August 11th, two workmen, repairing the cesspool were suffocated and when their bodies were found, the fire department was summoned. Engine Co. 306 responded. Fireman Charles R. Nagle of that company descended on a rope in the hope of saving the workmen. In a few moments, Nagle too collapsed, releasing his hold on the rope.

Fireman John Whalen and Dennis Finnigen procured masks and descended, in an effort to save Nagle, but when they reached him and had him hauled to the surface, he was dead, as were the two workmen. Finnigen and Whalen were not in any too robust condition themselves, even with the aid of masks.

The character of the poisonous fumes which killed the three men has not been determined and the Medical Examiner of Queens County is still laboring on the pathological features of the mystery. Later the Fire Commissioner was asked to permit a masked fireman to enter the cesspool to obtain samples, but he referred the request to the research laboratories of the Health Department. He said that one fireman was enough to lose in that manner.

W. J. DALY

Civic Club to Finance Sea Girt, N. J., Purchase—The Civic Association of Sea Girt, N. J., will support the financing of the purchase of a hook and ladder truck.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

A Warning by the Fire Warden

The New Jersey Forest Service has distributed cards upon one side of which is printed the following legend. The reverse side of the card explains how a permit may be obtained from the fire warden in order to burn refuse or to make camp fires. The fire warden hopes that the distribution of these cards will, in a measure reduce the large loss from forest fires.

New Jersey's Forest Fire Law

FORBIDS

(1) Being responsible for the burning of any wasteland, brushland or forest land except as below (a).
(2) Being responsible for any fire set to burn brush, litter, or anything that may cause a forest fire without a written permit from the local warden, except as below (b) and (c).
(3) Having any fire by which any property may be endangered, without maintaining a careful and competent watch until it is out.
(4) Interfering with a firewarden or his helpers in fighting forest fires.
(5) Refusing assistance or the use of property to a firewarden for fire fighting.
(6) Mutilating or destroying any State forest fire notice.

EXCEPTIONS

(a) An owner may set a backfire on his own property for its protection provided he does not let it escape from his own property.
(b) Permits are not necessary in any township where there are not firewardens.
(c) Permits are not necessary when fire is set more than 200 feet from woodland or from land containing any growth by which fire may be transmitted to forest or brushland.

THE LAW ALSO PROVIDES

(1) That a firewarden may set or order set any backfire.
(2) That a firewarden may arrest without warrant anyone he finds violating the law.
(3) That all penalties collected go to the townships concerned.
(4) That any person who helps put out a fire, even though a firewarden is not present, can be paid if his work is promptly reported to and approved by the firewarden. In any township in which fire service is established any person who shall find a fire burning in the forest or where the forest is endangered, shall immediately extinguish the same or being unable to do so notify a firewarden.

OVER

Missouri Firemen Have Convention

The annual convention of the Missouri Association of Fire-Fighters was held in Springfield, Mo., on September 1 and 2. In the absence of Mayor Freeman, the delegates were welcomed to the city by the acting city attorney. The convention was called to order by President Jones.

Mr. Atkins of the Missouri Inspection Bureau delivered a paper on the standardization of fire equipment. An address was also given on the advantages of the sprinkler system.

On September 2 a joint meeting was held with the state fire chiefs under the leadership of W. R. Price, chief of the fire department at Springfield. Motion pictures on fire prevention subjects were shown under the direction of J. Burr Taylor of the Fire Prevention Bureau of Missouri. Mr. Taylor also gave a talk on the subject of fire prevention. M. J. Mulvoy, secretary of the association, spoke on the pension fund in Missouri for firemen. The talk was followed by a general discussion in which many of the delegates participated.

Next year the convention will be held in Kirksville. The new officers of the association are A. J. Jones, president, St. Joseph; A. Webb, vice-president; M. J. Mulvoy, secretary-treasurer, St. Louis; executive committee, J. J. Manion, St. Louis, T. J. Hardwick, Kansas City, J. G. Heinen, Trenton and E. Daly, St. Joseph.

The delegates were entertained at dinner by the Chamber of Commerce and by the Underwriters Association of Springfield.

Iowa College to Give Fire Course

The Engineering Extension Department of Iowa State College will present an interesting and varied program at the second Short Course for Fire Fighters, to be held in Ames on October 26th to 29th. The program will be made up of talks by experts and round table discussions of the problems of fire fighting and fire prevention, and demonstrations of the various types of fire fighting equipment, rescue equipment, resuscitation and first aid training for firemen, exhibits of apparatus and publications, together with motion pictures illustrating the various phases of fire prevention and fire fighting.

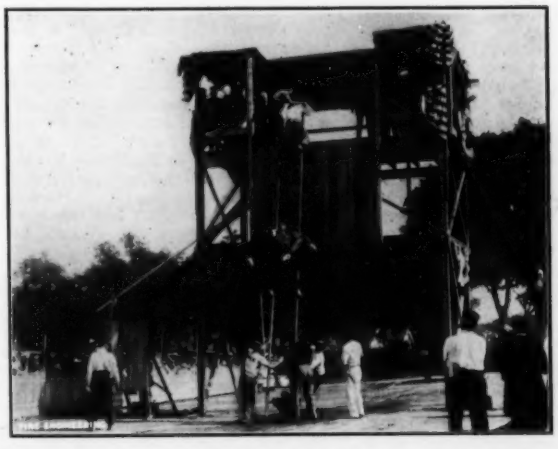
The course promises to be one of interest and practical value to every fireman. No fees of any kind will be charged, and everybody interested is invited to attend as much of the program as possible. Complete information regarding the course may be obtained by writing to L. J. Murphy, Municipal Engineer, Engineering Extension Department, Iowa State College at Ames.

Western Pennsylvania Firemen Meet

The annual convention of the Western Pennsylvania Firemen's Association was held in New Kensington from August 4 to 14. The delegates were welcomed by Burgess Burns, and President John F. Bowers for the association, responded.

Capt. William G. Kied of the American Red Cross Life Saving Station gave an interesting talk on this type of work and he demonstrated the various methods in use for saving lives.

The next convention of the association will be held in Greensburg. H. D. Porter was elected president and Bert Simon, vice-president. The parade held in conjunction with the convention was represented by ninety different companies. Various contests were held in which many companies competed.



Firemen's Contests at Long Island Gathering Thrills Crowds

The 10,000 or more spectators at the various fire contests held in conjunction with the tournament of the Suffolk County Volunteer Firemen's Association at Riverhead, L. I., N. Y., witnessed many exciting events. The illustration shows how the firemen from Amityville rescue victims from a burning building. The man on the ladder is carrying one supposedly overcome by smoke from the platform. Many handsome prizes were awarded.

Enosburg Falls, Vt., Builds Apparatus—The firemen of Enosburg Falls, Vt., have assembled their new fire truck on a Packard chassis.

COURSE OF INSTRUCTION IN FIRE PROTECTION

AS GIVEN AT THE UNIVERSITY OF ILLINOIS

HAZARDS AND EXPOSURES

By BENJAMIN RICHARDS
Manager Underwriters' Service Association, Chicago

THIS nineteenth installment of the University of Illinois Course in Fire Protection continues the consideration of general hazards and exposure. In treating of this subject, the author speaks from expert knowledge, and his ideas will be found of great value.

GENERAL HAZARDS (Continued)

Care of Ashes

There is nothing wonderful about that to talk about. We still have with us the man who shovels his hot ashes into a wooden barrel. Metal barrels do not cost much, but they are scarce among homes and hardware dealers should stock up on them and advertise them and thus get rid of all the wooden barrels.

I don't know whether we will have any ash barrels very long by the way oil burners are coming into use. I am on the Laboratory council and have reviewed forty or fifty oil burners for use in dwelling houses. Of course, they have not been used enough yet to draw real conclusions as to their safety. We try to avoid all we can the gravity feed for oil, because if there is a fire in the basement and the pipe is broken the oil keeps on flowing and continues to feed the fire. That is why approved devices require a pump feed, so if anything happens the pump can be stopped. Of course the oil should be kept outside, if possible.

Paints, Oils and Spontaneous Ignition

Of course the problem of spontaneous ignition arises in many factories. I reviewed a garage fire where a pair of garage man's overalls started a fire, which of course is rather surprising to some of us. They were only saturated with mineral oil, but I suppose there was other dirt maybe that helped. When we try to duplicate such a mineral oil fire in our chemical laboratories we cannot do it, but evidently oily rags and overalls should be taken care of if fires are to be avoided.

Gasoline, Benzine and Alcohol

We are all familiar with these hazards. Most of them, except alcohol, have a heavy vapor settling on the floor like so much water. Take the rubber mills, they are full of such vapors, but we have very few fires because we keep all those processes out of basements and pits. There was a building on which a tire and rubber company wanted insurance, but the floor of the room was eighteen inches below the grade and naphtha is bound to settle in such a low place. The insurer did not like our suggestion to correct the defect very well and said he would be glad to insure the building himself. We agreed and excluded that building when insuring the main plant. Before the year was out the building burned twice and a man was killed and others crippled for life. Then the owner wanted to know what to do. I told him to fill it up so the floor would not be below grade. That was nine years ago. He did it and we insured it and have not had a loss since. Naphtha fumes collect in basements and low places. Some people go to a lot of expense to buy fans and ventilating systems, which generally add to the hazard. The whistle blows, the mill shuts down, the factory stops and all vapors in the vent tubes settle back. They start up at one o'clock and you get a fire. This fellow I told about paid $7,000 for a ventilating system. I suggested filling the floor up at a cost of $180. If we can remember those fumes are like so much water we can drain them to a safe place. There is no use working against the laws of nature. People try to lift them out the roof. They will not go out the roof, they will readily go out on the floor level like water.

Chemicals

When it comes to chemicals we are getting into a technical subject. Chlorates are found in dye works. Where there are any chemical works in his territory, the fire chief and his lieutenants ought to get acquainted with the places where those drugs and chemicals are kept so they will not put water on them. The same is true of carbide in the acetylene generator plants.

Fuel Oil

This causes us a lot of trouble. We unfortunately have a lot of ideas which need readjusting to new facts. We think wood workers are bad and metal workers are good, which is true, but we have not adjusted our experiences properly to show the relative profits on those classes. Last year the record for the National Board of Fire Underwriters showed 78 per cent loss on metal workers, that is machine shops, foundries and such shops. The trouble in this class of risk is almost entirely due to fuel oil. Fuel oil is any old thing the oil companies sell, after they have taken everything else needed out of the oil. It is never twice alike. It may have some gasoline in it and when on fire in a tank it is the worst thing you can get up against. When heated it boils over and flows all over the place. In our metal workers there is much of fuel oil used now. We like to have that oil outside and a valve outside so it can be shut off in case of fire. Fire chiefs can get acquainted with oil systems and where the shut off valve is located, because there is no use fighting a fire and feeding it with oil at the same time.

Dust

Dust hazards are bad, especially in grain elevators. You know the farmer has explosions in threshing machines. Almost any dust will burn and explode. A lot of these explosions, like that in the big grain elevator in Chicago, occur from a little fire starting a little puff of dust. This ignites and causes a series of other puffs and they progress until by and by the million dollar elevator is ruined. They build up from a little explosion to a lot of explosions, each explosion driving more dust in the air as it goes along.

There is a book published by the department of agriculture which is very enlightening on the dust explosion feature. Dust should be swept up and be kept cleaned up. In a factory it does not make much difference what the dust is, although some dusts are more explosive than others. Steel fillings will burn just as will anything else if finely divided. Dust of any nature in any factory is dangerous. There are not many explosions in a cement mill although there are some.

Most Fires Cause by Disorder

There is only one cause of fire and that is, *disorder*, something out of place. Lightning is all right if running down the chimney on an approved lightning rod. I had a chimney 300 feet high insured for eighteen years and lost the top of it the other day. Why? A contractor working around it got careless and broke the lightning rod. When the loss came in I asked our engineer how it happened; if there was not a lightning rod on the chimney? He went to the mill and found that the rod had been disconnected. So the lightning was out of place being on a rod that was out of place. No matter what fire you have there is always something out of place. A fire is all right in a stove, it is all right in a fireplace, but when it gets out into the house it is out of place.

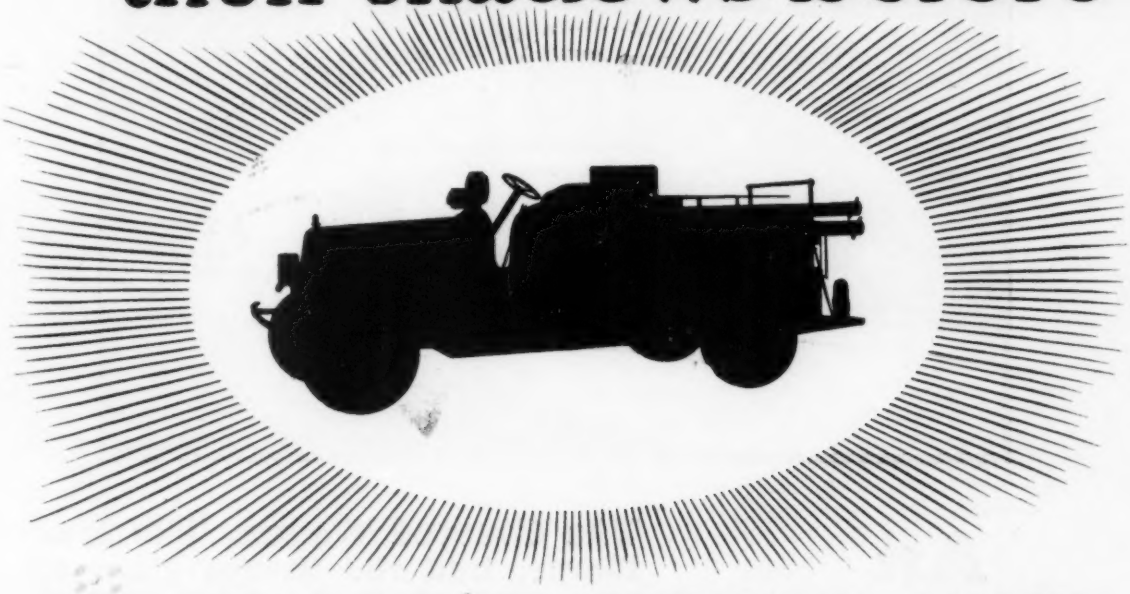
Two Fire Preventionists Die in Arkansas

Two of the men that were known in Arkansas for their fire prevention activities died in the same week. George W. Housley of the Eureka Fire Hose Company died shortly after he had addressed the city council of Stuttgart in the matter of buying hose and equipment. He was buried at Hot Springs, Ark.

Luke Barber of the Little Rock fire department was in charge of the fire alarm system at the central fire station. In less than fifteen minutes after his comrades had left him and retired at midnight, they found him unconscious with his finger on the fire alarm key. Both of these men "died in Harness" and active in the fields that they loved.

Davenport, Ia., Wants 24-Hour System—The firemen of Davenport, Ia., have petitioned for a straight system whereby they will work twenty-four hours and will receive a like number of hours off every other day. The present system has ten hours on for two days and twenty-four hours off on the third day. The new system as planned will not require additional men.

"Coming events cast their shadows before"



THE NEW "SEAGRAVE SPECIAL" 600 GALLON PUMPING ENGINE IS COMING

MORE THAN 100 HORSE POWER

AT A PRICE LOWER THAN WE HAVE EVER OFFERED SEAGRAVE PUMPERS OF THIS CAPACITY

WATCH THE OCTOBER 10TH ISSUE OF FIRE ENGINEERING FOR COMPLETE DETAILS

On Display at the I.A.F.E. CONVENTION
AT NEW ORLEANS
OCTOBER 19TH TO 22ND

The SEAGRAVE *Corporation*

Columbus, Ohio

Boston, Mass. Seattle, Wash. Dallas, Texas
New Haven, Conn. Philadelphia, Pa. San Francisco, Calif.
Birmingham, Ala. Chicago, Ill. Los Angeles, Calif.
Kansas City, Mo. Pittsburg, Pa.

C. & A. R. R. Waukesha Engined Versare Westinghouse Gas Electric Eight Wheel Bus racing the C. & A. DeLuxe Lincoln Limited

An Epoch Arrives

The Covered Wagon, The Iron Horse, and the Steam Pumper have each had their day. This bus heralds a new epoch in motor vehicle and gas engine development. Standard Six cylinder "Ricardo Head" Engines made the design and operation of this 72 passenger 30,000 pound bus possible. High power and uninterrupted service at full load were required.

Pumper Engines must have these same characteristics. Waukesha six cylinder engines are built in two sizes —one suitable for 500 gallon pumpers and the other for 750 gallon pumpers. Milwaukee has chosen them for their new pumpers. They have passed every Underwriter's 12 Hour Test with ease and six different manufacturers are now using them. Write for further information giving full description of them.

FIRE EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

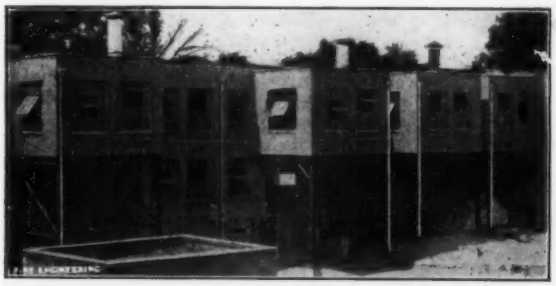
Builders of Heavy Duty Engines for Over Twenty Years

INDUSTRIAL PLANT PROTECTION

Isolating the Lacquer Hazard

Pyroxylin lacquers have come to stay. Since their introduction a few short years ago their use has spread rapidly. Today they are employed extensively in furniture and automobile-body plants, and have become established in a number of other industries as the regular finishing material. This quick-drying lacquer is also being supplied in small cans for general use in the home.

The popularity of pyroxylin lacquer finishes has been well deserved. But coincident with its increased use has come an increased fire hazard. The lacquer is composed chiefly of nitrated cotton, of which the familiar guncotton is an example, dissolved in such inflammable solvents as acetone, amyl and ethyl acetate, alcohol, and benzol. To this solution are usually



Lacquer Spraying Rooms Outside the Main Building

Lacquer spraying at the White Furniture Co., is done in outside elevated spray rooms.

added certain resins, softening oils, and pigments, depending upon the particular effect which is desired. Both the liquid base and thinner have low flash points. The lacquer is easily ignited and burns rapidly.

But the greatest fire hazard exists in the spraying operation, for which the quick-drying qualities of this lacquer make it adaptable. When the volatile solvents of the spray evaporate, there collects on the sides and floor of the booth a very fine residue of dangerous amount unless there is adequate ventilation and frequent cleaning. This residue is easily ignited by a spark. Certain types are liable to spontaneous ignition by merely heating. A glowing cigarette butt may start decomposition, which then proceeds rapidly until the resulting heat ignites the large volume of inflammable gases which are being evolved. There usually results the characteristic flash of burning gases, closely resembling a mild explosion. Long tongues of flame extending into the room from the booth opening will almost surely ignite combustible stock in the vicinity, and the wave of heat rolling down the room will open a large number of sprinkler heads beyond the actual area of the fire. This immediately places a heavy drain upon the water supply system and introduces possibilities of a large water damage.

Fires which have occurred recently in mills not insured in the Factory Mutual Companies give actual proof of the unusual hazard involved. The two top floors of a six-story building of the Boyertown Burial Casket Company, Boyertown, Pa., were burned out and goods in lower floors damaged by water when a lacquer spray-booth fire quickly spread beyond control of the sprinklers, causing a loss of nearly half a million dollars. Two more recent fires at the Fisher Body Company in Detroit were well controlled by good sprinkler protection, but water leaking into lower floors did damage which may reach $100,000.

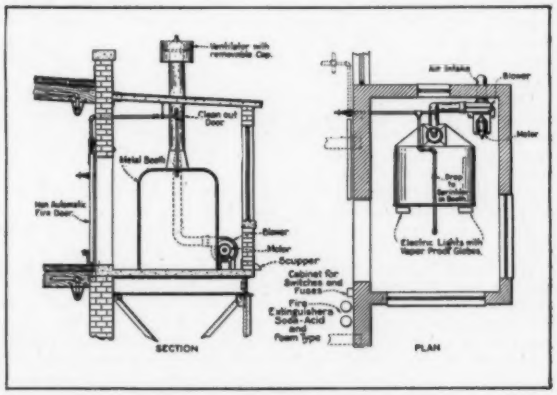
Particularly undesirable are situations where the lacquer spraying is being done in large areas of main floors containing a large value of goods stored or in process, or where the spraying is being done on upper floors with a large value of goods susceptible to water damage on floors below. Such situations can generally be improved by providing fire-resistive partitions to cut off the particular area where the spraying is being done; and where the present floor is not water tight, by waterproofing and by arranging scuppers in the outside building wall so that the water sprinklers and hose streams will be carried away without doing any great damage.

But where the amount of available floor space is limited, additional partitions may aggravate the crowded conditions, or may disturb the sequence of the manufacturing operations. These conditions led the White Furniture Company of Mebane, N. C., and the Charles P. Limbert Company of Holland, Mich., to build several spray rooms outside the building wall, with entrance from the interior of the building (See illustration). Such outside spray rooms as these will not only save existing floor space, but will make additional floor space available. They will not necessitate any considerable rearrangement of manufacturing processes, because usually these rooms can be built near the present location of the booths. But best of all, they serve to remove the hazardous spraying operations from inside the main buildings and will greatly lessen the possibility of large water damage on lower floors.

The fire cut-off between this type of small spray room and the main room can be provided by a fire door. Because there is a possibilitty that employees working in the spray room may become trapped, this door should be made non-automatic. When no spraying is being done the fire door can and should be kept closed, so that if fire breaks out, as it often does, when the equipment is not in use, the blaze will be confined outside the main building with its large values.

The accompanying sketch shows in a general way how to construct one of these rooms. No attempt has been made to make this a working drawing. It merely shows the essential features. Modifications to suit local conditions may be necessary. The size of the room and booth, for instance, may be varied to accommodate the type of work which is being sprayed.

In some cases this method of isolating the lacquer hazard may be more adaptable than waterproofing the floors of the main building and providing fire resistive partitions, and is worthy of



Diagrammatic Sketch of Outside Elevated Spray Room

consideration in those mills where the recently introduced use of pyroxylin lacquer has greatly increased the possibility of damage. This department will be glad to discuss details as they apply to any particular situation.—*Factory Mutual Record.*

This is Not the Recommended Method

Many of the towns in China now have modern fire apparatus to fight conflagrations but the ancient superstition in reference to the dreaded "Fire" continues to exist in many of the places.

When one small municipality near Shanghai purchased a modern fire apparatus, it was formally inaugurated into service by burning incense sticks all over it, and it was finally rushed to various parts of the town where its use in fighting fires was demonstrated. This was to show the evil fire spirit that they were prepared for him and that he should operate elsewhere. A parade was held to further scare off the fire spirit.

Even though many of the Western ideas have been transported to the Occidental, the belief that fire is caused by an

animal called the "firefox" with a flaming forked tail, continues to exist. In fact many of the people will solemnly swear that they have seen the animal run across the roof spreading the fire as it ran.

In some of the Fukien Province cities there is a custom which is not recommended but which instills in the minds of the natives, a sense of adequate protection. They don't worry about the capabilities of their water system. Large pieces of paper with the word "water" are pasted on the building upside down, near the roof line. The "firefox" in his travels will look down and see that water has been poured all over the building, and that it will be useless for him to try any of his stunts. And so he will pass on—fooled—or is it the natives who are fooled!

Detroit Purchases New Type Pumper

The city of Detroit has recently worked out a new solution to the problem which almost every city in size has to contend with—that is, fire breaking out from spontaneous combustion in the various dumping grounds and waste fields.

In Detroit, as is true in most places, the waste fields are at a considerable distance from fire hydrants. Also, being newly made land, the ground is light and porous and in many places not sufficiently strong to sustain the weight of heavy fire trucks.

Such fires, as a rule, do not cause any serious danger unless they should happen to extend beyond the field itself. However, in Detroit there have been serious and continual objections raised by nearby inhabitants or factories from the amount of smoke being blown off of the field continuously. Also, because of the wide area Detroit covers, the city officials have found it advantageous to run into the fields the street car tracks and by using work cars over the street railway they are able to haul their refuse and waste long distances at much less than it would cost by teams.

The fire, therefore, breaking out in their dumping grounds has burned up the railway ties and thus caused an appreciable loss.

There has been serious objection to bringing in any of the heavy duty fire trucks to handle such fires. The expensive nature of the equipment would result in greater damage and loss in the fire equipment than has otherwise resulted from the fire being allowed to burn in the waste fields. Recently fire broke out from spontaneous combustion in the new 500-acre Aviation Landing Field, which is now being filled in by being used as a dumping ground. This fire broke out on Saturday night, and over Sunday, which was a rainy day, it had spread sufficiently to burn up some $500 worth of the street railway ties.

On Monday morning, although the fire was continuing to spread, it was the general opinion of the Fire Captain and other officials concerned that the heavy duty fire apparatus could not be safely gotten into the field and that some other means would need to be tried.

A Jaeger fire pumper, which is designed for fighting fires in villages and rural communities was tried.

For the emergency demonstration, the Jaeger pumper, mounted on the front end of a light commercial roadster, was able to travel in quickly over the dirt roads leading into the fields, which were a sea of mud at that time, over the new made lands and down to a ditch filled with water, mud and grit. In a few moments the necessary line of hose was laid and the special pumper was handling water out of the ditch, through the hose and onto the fire in the aviation field. The pressure of sixty to eighty pounds proved to be ideal to penetrate the crust on top of the new made field and down to the underneath portion where the fire was blazing and spreading. In a short time all of the fire along the street railway tracks had been put out. Then the firemen proceeded to confine the fire within the area already burning and thus stop its spread.

As a result of the demonstration made, the city purchased the pumper.

The light weight of the equipment permitted it to be taken into places that no heavy fire truck could reach.

Maritime Chiefs Hold Convention

The convention of the Maritime Fire Chiefs' Association was held in Bridgewater, Nova Scotia. Many interesting papers were read including those on "Salvage" by Chief Ryder of St. Stephen, New Brunswick, "Stopping Fires Due to Chimneys and Flues" by Major Rudland, Nova Scotia Fire marshal, "Drafts and the Part it Plays at Fires," by Chief Jessom of North Sidney, "The Investigation of Fires," by Major Wright, assistant fire marshal of Nova Scotia, "Hydrant Collars," by Chief Daley, and a paper on the standardization of couplings.

After a very thorough discussion of the papers, the convention passed the following resolutions:

That the association adopt the standardization of hose couplings. Communications should be started with the railroads asking for free transportation for fire chiefs attending the convention. That the association ask all towns where they have not a building inspector, to appoint one and pass a law that all buildings constructed or under course of construction, be inspected. All fire chiefs or the officer in charge of a fire were urged to investigate for the cause of the fire.

A discussion was held on the problem of sending apparatus outside of the district and the charge that should be made for this service. The subject was left over for future discussion.

The convention next year will be held in Truro, Nova Scotia, on June 15 and 16. The following are the newly elected officers: president, Chief George Ryder, St. Stephen, New Brunswick; vice-presidents, Chief Alex. Clark, Halifax Shipyards, Chief W. A. Gow, Bridgewater, Nova Scotia and J. L. McIntosh, Milltown, New Brunswick; secretary-treasurer, Capt. James P. Devan, Dartmouth, Nova Scotia; assistant secretary, T. G. Taylor, Truro, Nova Scotia; auditors, Chief R. A. Lusby, Amherst, N. S., and Chief J. W. Churchill, Halifax, N. S.

Louisiana Fire Prevention Bureau Formed

The Louisiana Rating and Fire Prevention Bureau has been organized to take the place of the Louisiana Fire Prevention Bureau that is now in the process of liquidation. The new bureau commenced operation on September 1 in the same location as the old organization. The officers of the new group are Julian Prioleau, president; John X. Wegmann, vice-president; K. P. Strong, secretary-treasurer. The board of directors consists of James B. Ross, E. H. Addington, C. J. Wykoff, H. A. Steckler, L. A. Nelson, R. M. Pons, J. H. Van Amburgh, F. G. Tupper, R. H. Colcock, Jr., E. J. Sullivan, J. L. DeTreville, W. P. D. Bush, R. J. Gregory, and the state fire marshal.

Rome, Ga., Boy Convicted of Arson

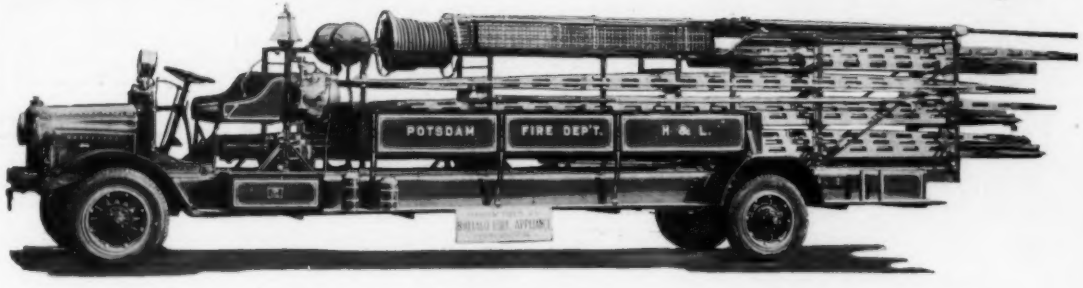
A well thought out scheme of setting fire to a number of buildings in Rome, Ga., was frustrated when a colored watchman at the gas works saw a boy set fire to a pile of boxes near the plant. The city officials were notified and the boy was soon caught and identified by the watchman. The youngster maintained his innocence but after a night in jail, he told his story to Chief Taylor.

In the police court, the boy entered a plea of being guilty to six cases of arson, and he talked freely of each charge. He had a list prepared of the houses that he intended to set on fire at an early date. When questioned by Chief Taylor he said that he had no ill feeling towards the owners or tenants of the buildings, city officials or any one connected with the city, but that he was at loss to account just why he did it.

Float Used in Fire Department Parade in Dartmouth, N. H.

In the parade in celebration of the Natal Day of Dartmouth, N. H., the fire department arranged a float that was awarded first prize. The float shows a dwelling house on fire with smoke issuing, and six streams being played on the building by boys. A child's express cart was reconstructed to resemble an aerial ladder; boys' autos were made to resemble pumpers. The water from the roof ran to a spout and then into two barrels inside the house. A small pump operated by a 1½-h.p. engine repumped the water through 1½-inch suction. The mechanism of the float was designed by William Harrison, machinist of the department, and the float came under the direction of Capt. James P. DeVan.

BUFFALO



Chief Rogers of Potsdam, N. Y.
Praises His Buffalo-Built Apparatus

Here is the letter he wrote us, word for word:

"In regard to rebuilding our hose and chemical Brockway, which was done by your company and delivered last Thanksgiving Day, the reason we have not made a statement in regard to same, is that we wished to try machine under winter conditions.

"We put the ladder truck into service as soon as delivered and it has answered every alarm this winter. We take pleasure in reporting to you as follows: You made a few slight changes, but every one was in our favor and for the improvement of the job. Your method of lengthening and trussing chassis is excellent. We are able to make any corner in our village, disregarding width of streets. The machine handles a lot better than before the change. The ladder arrangement is extra good and very accessible. The extra hose bodies on the sides of the truck are an innovation in truck equipment. We cannot speak too highly for this arrangement. The general appearance of completed truck is a whole lot better than other trucks which we have seen that cost much more. In fact, the whole job exceeds our fondest expectations. We stand ready to recommend your work to anyone interested in fire equipment. You may use this letter as you may see fit."

Potsdam is just one of the numerous cities, towns and suburban and rural communities that are satisfied users of Buffalo-Built-to-Your-Order fire apparatus. Whenever you consider the purchase of new equipment of any type, it will pay you to get complete information on Buffalo apparatus and the Buffalo way of doing business before you make a decision. Doing so, places you under no obligation whatever.

May We Send You Complete Information?

BUFFALO FIRE APPLIANCE CORP.

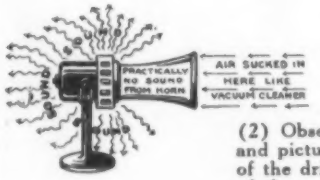
Main Office and Factory, Buffalo, N. Y.

BUFFALO

WHY SIRACODE IS THE SEARCHLIGHT OF SOUND!

COPYRIGHT

A Siren is Pictured Here



(1) Note that the so called "Horn" merely serves as an intake for air, emitting practically no sound! For this reason many manufacturers omit it completely on certain models. As a matter of fact it is more of a detriment than an asset.

(2) Observe how the sound is ejected through a number of port holes in all directions, and picture, if you can, what a large percentage of it is forced **backward** into the ears of the driver, and over the road already travelled, this increasing **greatly** with the speed of the vehicle! Do you wonder why they don't clear the way ahead?

Now Study The Construction of a Siracode

(1) Note that the rotor and stator are **Parabolic**, causing the sound waves to be **forcefully projected forward in the line of travel** where they are **wanted and needed.**

(2) Observe the scientifically shaped, and correctly proportioned deflector, which also **greatly intensifies the sound.**

(3) The specially constructed motors used for **SIRACODE** consume about **one third** the amperage of a siren of similar volume, **in short.**

SIREN= LAMP POST

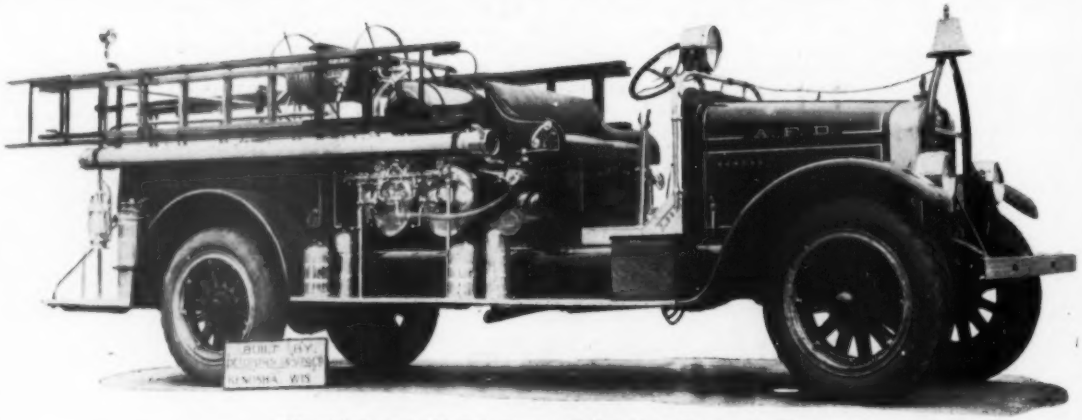
SIRACODE= SEARCHLIGHT

So Why Put a Lamp Post on Your Car?

SIRACODE SIGNAL CORPORATION

Formerly Heath Engineering Laboratories, 354 Pine St., San Francisco, Calif.

PIRSCH FIRE APPARATUS



"Pirsch" Special 500 Gal. Pumper Delivered to Algonquin, Ill.

Backed by our 70 years manufacturing experience—Thirty of which was devoted exclusively to the building of Fire Apparatus.

PETER PIRSCH & SONS CO.

KENOSHA, WISC.

15-25 Whitehall St., New York, N. Y.

FIRE DEPARTMENT ACTIVITIES

Newell, Ia., Receives New Fire Apparatus—A carnival, auto races and other contests were held in Newell, Ia., to celebrate the arrival of the new fire apparatus.

Palmyra, Pa., Receives New Ladder Truck—The Independence Fire Company of Palmyra, Pa., has received its new ladder truck. This is the third piece of fire apparatus in the town.

Washington, Ia., Wants Improvements—A campaign has been started by the firemen of Washington, Ia., for improvements in the local fire department.

Triple Combination Pumper for Little Chute, Wis.—Little Chute, Wis., has accepted the bid of the W. S. Nott Company and will purchase a triple combination pumper for $5,000.

LeMars, Ia., Considers Apparatus Purchase—The council of LeMars, Ia., are considering the problem of the purchase of additional fire apparatus for the town.

Mineola, L. I., Orders Hose Wagon—The trustees of Mineola L. I., N. Y., have ordered a Stutz combination chemical and hose wagon.

Sisterville, W. Va., Has New Apparatus—A new Graham Brothers truck equipped with fire department accessories has been delivered to the American Legion post at Sisterville, W. Va.

Des Moines, Ia., City Fire Marshal Dies—A. B. Pray, city fire marshal for Des Moines, Ia., for the past eight years, died at his home as the result of a paralytic stroke, at the age of fifty-two.

Pine Island, Minn., Purchases Apparatus—The village council of Pine Island, Minn., has purchased a Foamite-Childs 400-gallon pumper. Delivery is expected to be made in sixty days.

Dover, N. J., Plans for Firemen's Celebration—Plans are being made in Dover, N. J., for the annual firemen's celebration which will be held this year on October 12. There will be a number of contests arranged for the local and guest companies.

Maxwell, Ia., Has New Siren—Maxwell, Ia., has installed an electrically operated fire siren on top of the water tower. The siren is controlled both by a switch in the telephone exchange, and by one in the town hall.

Raymond, Wash., Apparatus Housed in New Home—It is probable that the budget of Riverside, Cal., will be changed so that the amount alloted for fire department work will be increased. The chief has asked for almost $60,000.

Dubuque, Ia., Saves Village from Conflagration—An engine company from Dubuque, Ia., rushed to Louisburg, Wis., probably saved that village from total destruction by fire when a blaze started in a feed mill. The apparatus made a sixteen mile run, and the 1,000-gallon pumper soon had the fire under control.

Stills Constitute Serious Hazard—Gen. Andrews, chief U. S. prohibition officer, stated that there were about 1,000,000 stills in operation in homes, and other buildings. These crude distilleries have increased the fire hazard, and the insurance companies state that a still in a home is of greater danger than a "Firebug."

Paterson, N. J., Firemen Rescue "Baby."—After considerable excitement, the firemen of Paterson, N. J., fished out what some excited resident thought was a baby floating in the Passaic river. After fishing in the river for about two hours, the men pulled out a doll with vivid yellow curls.

Raymond, Wash. Apparatus Housed in New Home—The new fire apparatus of Raymond, Wash., is housed in a new building that was constructed by one of the townspeople and rented to the city so that the price of the station may be paid for in rent.

Ahrens-Fox has Oregon Sales Agents—An announcement has been issued by the Ahrens-Fox Fire Engine Company that the A. G. Long Company, Portland, Ore., have been appointed sales agents for the states of Oregon, Washington, Idaho and the territory of Alaska.

Harrisonburg, Va., Chief Dies—Chief W. A. Braithwaite who has been head of the fire department at Harrisonburg, Va., for fifty-four years, and believed to be the oldest fire chief in the country in the point of service, died at the age of seventy-one. He served as head of the fire department since its organization.

Lyons, N. Y., Acquires New Fire Apparatus—A new pumper, and a new combination chemical and hose car have been delivered to Lyons, N. Y. The apparatus are mounted on a Selden chassis and are manufactured by the Buffalo Fire Appliance Corporation.

Chief Flores of Shreveport Celebrates Anniversary—Chief S. J. Flores of Shreveport, La., has celebrated his twentieth year of service in the fire department. He joined the department when only nineteen years and has worked his way up from the bottom. He has attended the New York fire college and is an ardent fire preventionist.

Standardize Fire Drills in Erie, Pa.—A set of regulations have been instituted in Erie, Pa., in order to standardize the fire drills in the public schools. The new rules provide that drills must be held at least once each month, and no drill shall be announced before hand. Teachers and all must participate in the drill.

Frostproof, Fla., Purchases Apparatus—**A 750-gallon** pumper has been purchased by Frostproof, Fla., and the local post of the American Legion has offered their services as members of the fire department that is to be formed. Should the offer be accepted, it will be the second legionnaire fire department in the district.

Tacoma, Wash., Asks for More Funds—The fire department at Tacoma, Wash., has asked for an increase in the city budget to allow for the increase in wages granted to the members of the department, for an increase in the personnel, and for $50,000 to construct a new fire station. Amounts were also requested for the improvement of the fire alarm system.

Riverside, Cal., Makes Plea for Fire Protection—Representatives of numerous civic clubs in Riverside, Cal., have appeared before the council to urge that body to consider the matter of added fire protection. It is claimed by these bodies that the fire department has not grown with the city.
the hospitality of Memphis.

Mobile Ends Office of Fire Marshal—Since the death of Ex-Chief George W. Myrick, city fire marshal of Mobile, Ala., the city council has done away with the office of fire marshal. The position was created upon the retirement of George W. Myrick as chief of the fire department, so that the city could show some appreciation for his many years' service as a fire-fighter.

Large Forest Fire Destroys Timber in Maine—A forest fire which started near the town line of East Machias, Maine, has developed into a forest fire about two miles long. Buildings of the summer school of the Massachusetts Institute of Technology were in the path of the advancing flames. Several thousand acres of timber were destroyed.

Arlington, Mass., Wire Superintendent, Dead—Reuben W. LeBaron, superintendent of wire and fire alarm system of Arlington, Mass., for twenty-one years, died at his home on his fifty-sixth birthday. He was the inventor of a compressed air whistle, a member of the Massachusetts Fire Chiefs' Club and the Society of Electrical Engineers. He is survived by a widow, two sons and a brother.

Many Buildings in Marion, Ind., Ordered Razed—The Indiana state fire marshal has ordered several buildings in the down town business section of Marion, Ind., to be razed. The office of the fire marshal will see that the condemnation order will be followed out to the full letter. If the buildings are not torn down within the period of sixty days, they will be razed by the state department.

Glendive, Mont., Fireman Leaves on Concert Tour—Howard Melaney, a member of the fire department at Glendive, Mont., has left for the east where he will broadcast several musical numbers by way of the eastern radio stations. Madam Schumann-Heink has stated that Mr. Melaney's voice has great promise, and following his visit to the east, he will return to St. Paul for a course of musical instruction.

Pennsylvania Volunteers Entitled to Compensation—The state compensation commissioner has ruled that the volunteer firemen of Pennsylvania who are injured in the line of duty are entitled to compensation for their injuries. This ruling will affect about 250,000 volunteer firemen in the state. Heretofore the firemen have not been paid for injuries unless they provided for the emergency from a fire department fund.

Thirteen Additional Des Moines Men Want Jobs—As an addition to the list of twenty-four firemen who are sueing the city of Des Moines, Ia., for their old positions in the fire department, thirteen of the men who were discharged in the last spring cleaning of the department, have entered suit against the city. The action followed the refusal of the city legal department to allow the consolidation of the cases of all the firemen. Frederick Lyons, one of the discharged firemen has been ordered placed on the active list two months ago by the courts.

FALSE ALARMS

SOME STATION?

We should judge that some typesetter must have been spending a rather pleasant few hours by the way the following news item was set.

"Our new central fire station was given an informal inspection by the Mayor and some of the City Government last night and were shown around by the Chief and his Asst. All pronounced it to be a fine piece of work and very neat in all ways. The only apparatus in service at present is a 5-ton truck which was loaded with new stills and several hundred pounds of mash, bottles, and several barrels of a licquor which the Chief stated would be taken over by the City in two weeks and then the Boys would be glad to have the public visit the station."

RESULTS EFFECTIVE

The following paragraph is part of a story that appeared in a New Hampshire paper giving an account of a disastrous fire.

"The effects of the water thrown by the engine was noticeable, and side by side the firemen fought the flames in a masterly manner. The flames which were looming in a menacing manner through the room, were lessened, and in a short time the combined efforts of the two departments produced results and the building was badly damaged."

A BOON TO TRADE

A policeman stationed in the slum district of New York city during a hot spell noticed that a number of children passed him by attired in dripping bathing suits. When he made inquiry among the youngsters he was told that they came from Kipperman's beach, and as the policeman knew that there was no beach in the neighborhood, he made a rapid survey. Kipperman was an aggressive business man who in order to stimulate sales in bathing suits had opened up a high pressure fire hydrant in front of his store. Only the children who were attired in bathing suits purchased from him were permitted to enjoy the privileges of "Kipperman's Beach." He was fined five dollars.

THE FIREMEN'S SONG

In a tenement one day,
Sat a couple, old and gray,
Thinking of their boy in blue,
Who lost his young life,
Fighting the red wolf of prey,
Little did the old folks know,
That in the rooms below,
This same red wolf was creeping on,
The old folks smelt the smoke,
Saw the fire was coming thru!
But it was too late for them
To make their escape,
Just then the fire bells rang,
Calling out our boys in blue,
Who raced down the street,
Thru the slush and sleet,
The red wolf was conquered—
The old couple was saved.

CHORUS

For our friends in need,
Are our friends in deed,
When trouble comes our way,
Our soldiers and sailors are heroes,
They fight for the red, white and blue,
But there is another army we love
It's our firemen in blue—
God love and bless them all!

—Fireman HAROLD J. LIEBERMAN,
Norwich, Conn.

HE SAW IT

In one of the rural towns, some one called the fire department and in the heat of reporting the alarm, several companies from nearby towns were also called out. The day was freezing cold, and the companies that were not called upon to assist in extinguishing the blaze covered up the radiators of the apparatus so that the engine would not freeze.

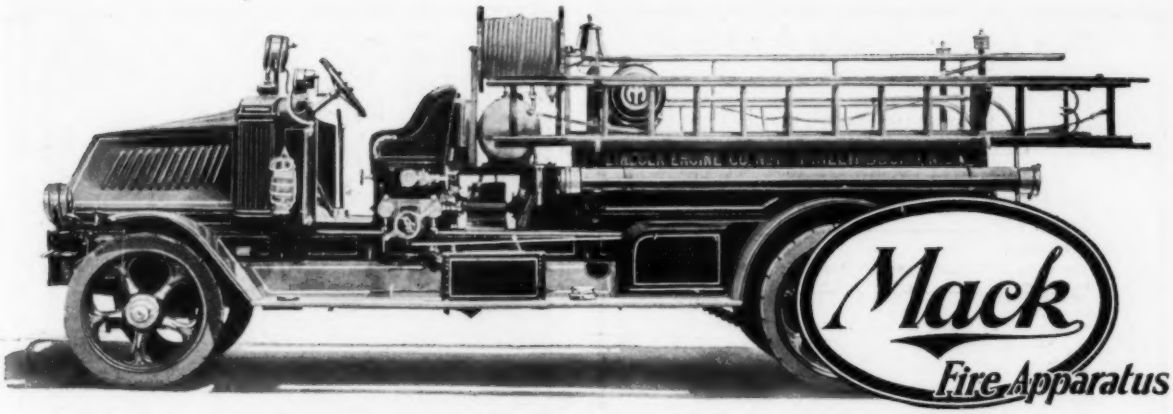
One of the men took a blanket and covered up the radiator of a chemical mounted on a Ford chassis.

A little boy who saw the incident said, "Don't cover it up mister, we saw what it was."

There was sure some hot necking when Uncle Amos got too near the gas with his celluloid collar on.

AW, DRY UP!
IF MY CONSCIENCE AINT NO CLEANERN THIS WASH, MY CHANCE IN PARADISE IS LOST, SURE!
BETTER SEND IN A BREAKDOWN SIGNAL! THE CLOTHES'LL ALL MILDEW IF YOU LEAVE EM NOW!
FIRE!
GEE! WHAT A GRIND!
AW! LET 'ER RING! WE CAN'T GO UNTIL THIS WASHING DONE!
THERE'S A JOB, PETE!
CLICK CLICK CLICK
F.D.

The Cleveland Fire Department of the Future if Commissioner Barry's Suggestions are Carried Out.



Another town *depends* on MACK

PHILLIPSBURG, New Jersey, a city of 16,000 inhabitants, has recently installed its latest Mack, an AC Triple Combination Pumping Engine, Chemical and Hose Car—a unit especially designed for communities that must depend on a limited number of pieces for fire protection.

Mack pumping engines are available in all capacities. The complete line includes those specially designed for rural and small town service as well as for the requirements of the largest metropolitan fire departments. Write for catalogues illustrating and describing the full line of Mack Fire Apparatus and Municipal Service Equipment. They will be forwarded promptly on request.

One hundred and eight Mack factory branches are at your service.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

Branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," or "MACK TRUCKS OF CANADA, LTD."

Shuredry Salvage Covers

COST LESS—
WEIGH LESS—
MORE EASILY HANDLED

Chief Boyd, of the Knoxville, Tenn., Fire Department, has used "Shuredry" Salvage Covers for eight years. He says: "They are *waterproof, not affected by the weather, easy to handle, and altogether the most satisfactory covers we have ever used.*"

They do not freeze in winter, nor become tacky in summer. They are not subject to spontaneous combustion, nor to cracking where folded. One man can carry four up a ladder at one time.

Made in standard sizes. Write our nearest plant for samples and prices.

FULTON BAG & COTTON MILLS
Manufacturers since 1870
Atlanta, New Orleans, Brooklyn, St. Louis, Dallas, Minneapolis

The Los Angeles Fire Dept. is 100% B & M equipped.

Hundreds of Cities over the country using our sirens.

We gladly send B & M Sirens to cities on approval without expense.

B and M

SIREN

"It pierces the air"

U.S. PAT. OFF.

You Will Eventually Buy B & M's

Fire officials find the powerful B & M fire apparatus Siren to be ideal to meet modern street traffic conditions. Electrically-driven Sirens cannot be operated successfully by storage batteries in hard and continuous service. Hand-rotated Sirens are both exhausting and dangerous to the operator. Therefore, the mechanically-driven B & M Siren with its piercing screech that can be heard for miles is the ideal fire apparatus Siren.

Send for Complete Information

B & M MANUFACTURING CO.
Lester H. Miles, Proprietor
931 So. Main St. Los Angeles, Calif.

This Letter Speaks for Itself

FIRE DEPARTMENT
CITY OF KINGSTON, N. Y.

Fire Alarm Headquarters, August 7th, 1926.

The National Electric Specialty Company,
Toledo, Ohio.

Gentlemen:

On the evening of August 2nd our city was hit by a severe electrical storm, which blew numerous transformer fuses and put several hundred telephones out of commission. But, the Primo Giant Lightning Arrester saved the Fire Alarm and Police Signal Systems.

I have at various places along our circuits a Primo Giant cut in on an Alarm Box or Police Box and I do not ground these arresters were they are out on the line. But, at the ends of the circuits where they go in underground cable I have them grounded, and I find that occasionally we lose a fuse we do not lose any expensive box or bell coils like we did years ago.

I am thinking about arranging a bank of these Primo Giants in an iron box at the entrance of our trunk cable at Fire Alarm Headquarters and should I be able to get permission to do so I will forward an order for same to you.

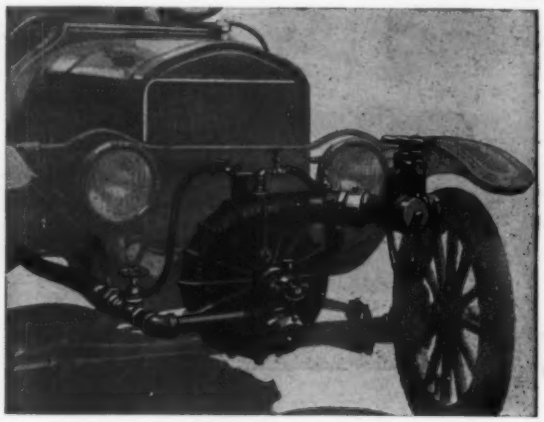
I notice that where we place a Primo Giant on the line wire so that the wires going down the pole to the Fire Alarm box go through it, the lightning will arc across the VAC-M tube and never go down the wire to the box.

This happens right along on our circuits with no injury to the box and only a slight kick back to the office, so I know that they get away with lightning o. k., and save us many an open circuit.

Very truly yours,
Marshall G. Miller, Supt. Fire Alarm,
City of Kingston, N. Y.

Send for Complete Information

The National Electric Specialty Co., Toledo, O.



FIRE PROTECTION
At Low Cost

Here's the evidence—

VERMONTVILLE, Mich.

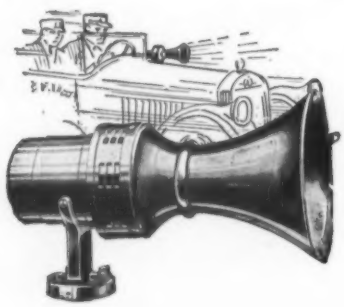
"Gentlemen:

We are writing to inform you we are very much pleased with our Barton Fire Pump mounted on Reo Fire Truck which was purchased from you a few weeks ago. We have attended four fires and paid for the apparatus more than three times over at our first fire.

Very truly yours,
VANCE F. BARBER,
Fire Chief."

Write for complete details.

AMERICAN STEAM PUMP CO.
Battle Creek, Michigan



The Sterling No. 12

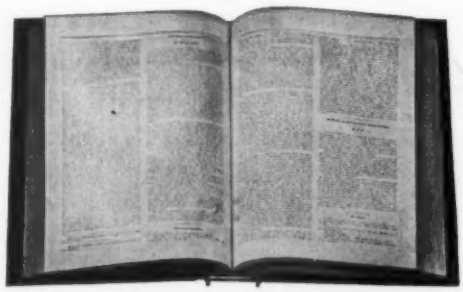
This is the powerful electrical Siren used by leading fire Chiefs. It is ideal for all fire apparatus and other vehicles requiring a commanding signal.

We will send you a Sterling No. 12 complete with 10 feet of dual cable, for free examination and trial. You may return it if not fully satisfied.

Price complete.....$40.00

Sterling Siren Fire Alarm Co., Inc.

61 Allen St. **Rochester, N. Y.**



Preserve Your Copies

Every issue, as you know, is packed full of interesting and authoritative data, ideas, news, etc., that you like to keep handy for ready reference. Why not keep them all together in a binder? You'll find this special one a great convenience. The cost is only $1.75 and many of our subscribers are already using them. What about you?

Address:

Book Department, Fire Engineering
225 W. 34th St., N. Y. C.

Name .....
Position .....
Address .....

PROPOSED IMPROVEMENTS

Uniontown, Fayette Co., Pa.—A $4,000 bond issue for purchase of fire apparatus approved.

Yreka, Siskiyou Co., Cal.—Chief H. V. Loy requested City Council to purchase additional equipment.

Durham, Durham Co., N. C.—City may extend water lines to Hickstown Section of West Durham.

Clovis, Fresno Co., Calif.—The purchase of a pumper at an stimated cost of $6,000 is under consideration by the local chamber of commerce.

Le Mars, Plymouth Co., Iowa—Fire department asks for supoprt of ci citizens in their endeavor to secure adequate equipment for their department. Herman Becker, Chief.

Faribault, Rice Co., Minn.—City will purchase new fire truck. S. M. Andrews, City Clerk.

Brook Haven, Suffolk Co., N. Y.—Plans are prepared for the new fire station to be erected at Railroad Avenue and Seeley Street, Brookhaven Center.

Rhinebeck, Dutchess Co., N. Y.—The purchase of a pumper for fire department is under consideration.

Beaumont, Jefferson Co., Tex.—City votes October 16th on bond issues including $150,000 for fire stations.

Boonton, Morris Co., N. J.—Fire station will be erected at cost of $8,000.

Pomona, Los Angeles Co., Cal.—Chief Showman recommended to the city council the installation of fire alarm system, the building of a drill tower and the purchase of training equipment for student firemen.

San Leandro, Alameda Co., Cal.—Board of Supervisors direct clerk to advertise for bids for fire apparatus.

Sausalito, Martin Co., Cal.—Committee appointed by city council to investigate cost of fire apparatus.

Onset, Plymouth Co., Mass.—Contemplating purchase of a pumper for the fire department.

Grant, Mich.—Terry C. Mann, P. O. Box 104, wants to hear from manufacturers of small fire pumps, 150-300-gals. capacity, to be mounted on motor trucks.

Jefferson City, Colo., Co., Mo.—Chief F. E. Robertson asks that city vote in favor of the $16,500 bond issue for purchase of fire apparatus.

Pawnee City, Neb.—The sum of $600 has been appropriated for the purchase of fire equipment.

New Milford, Borgen Co., N. J.—Plans for erection of new fire station have been completed.

Sauquoit, Oneida Co., N. Y.—Purchase of fire apparatus approved by voters of Fire District No. 1.

Open for Connection

Fire Apparatus Sales Manager

Thoroughly capable and experienced fire apparatus man, with wide acquaintance among fire officials, and an unusually successful sales record, is open for engagement.

Address: Box 124, % FIRE ENGINEERING, 225 West 34th St., N. Y. C.

9/25

Proposals for Fire Hose

SCOTTDALE, PA.

Bids will be received on Oct. 2nd, 1926 by J. T. Strickler, Borough Secretary, for the purchase of five hundred (500) feet of 2½ inch fire hose. Right reserved to reject any or all bids.

9/25

Ford Pumper For Sale

Built during winter of 1924-25. Since building have found apparatus too small for our use and replaced with bigger machine.

Exceptional opportunity to secure a good pumper at low cost. Write to F. E. Ingals, Guilford, Conn., for full information.

9/25

Fire Chief Position Wanted

Man with exceptional qualifications would like position of fire chief in growing town. Over sixteen years practical experience and thoroughly familiar with all phrases of fire fighting. Will gladly furnish complete information on past work, and can give best of references.

Address: Box 125, % FIRE ENGINEERING, 225 West 34th St., N. Y. C.

9/25

Final Arrangements for Chiefs' Convention

(*Continued from page* 932)

and importance at this time. Following is the complete list:

AUTOMOBILE TRAFFIC AND THE FIRE DEPARTMENT—by Chief John Kenlon, New York.

HAZARDS OF OIL BURNERS, HEATERS, Etc. (For "Round Table")—by Chief Ross B. Davis, Philadelphia, Pa.

HANDLING FIRES IN "THREE DECKERS"—by Chief C. H. McCarthy, Worcester, Mass.

DISCIPLINE AND MAINTENANCE IN VOLUNTEER FIRE DEPARTMENTS—by Chief Stanley S. Coates, Burlington, Ont. Canada.

THE PASSAGE OF ADEQUATE LAWS AND THE ESTABLISHMENT OF PROCEDURE FOR APPREHENDING AND CONVICTING INCENDARIES—by F. R. Morgaridge, Arson Dept., National Board of Fire Underwriters.

EFFECTIVE FIRE STREAMS FROM VARIOUS SIZE MAINS—by Fred Shepperd, Managing Editor of FIRE ENGINEERING, New York.

PRELIMINARY TRAINING OF FIREMEN—by John G. Gamber, State Fire Marshal, Springfield, Ill.

IMPROVEMENTS IN THE METHODS OF STORAGE AND PREVENTION OF FIRE IN MOVING PICTURE FILMS—by Hickman Price, Asst. to Will H. Hays, Pres. of Motion Picture Producers & Distributors of America, Inc., New York.

Suitable provision will be made this time for the Round Table Discussion. A whole session will be devoted to this important feature. Come prepared to ask questions and advice on any problem that you want help on. This is a great opportunity to cash in on the other fellow's experience.

"The Fire Brigade" Completed

The Motion Picture "The Fire Brigade" has been completed, and according to Jay Stevens who supervised the filming in the Association's behalf, it is a much bigger and finer production than had been anticipated. It will be shown for the first time at the banquet the second night of the Convention, and will then open up in New York and other cities. A pamphlet, now in the printer's hands, and giving full details regarding the picture and its distribution, will be sent to you and every other fire official as soon as it comes from the press. Remember the title of our film is "The Fire Brigade" and the producers are Metro-Goldwyn-Mayer. Do not confuse it with "The Still Alarm", "The Fire Fighter", and similar pictures gotten out by other producers, and under no condition give your endorsement to such pictures.

How to Get Reduced Fare

Attention is called to the fact that railroad fares to the New Orleans Convention will this year be arranged on what is known as the round trip identification plan basis, fare and one half for the round trip which will be paid at the time the ticket is purchased instead of buying a ticket one way and then buying a return ticket at the convention city at half rate as has been done in previous years.

Tickets must be validated at New Orleans by ticket agents at the regular ticket offices of the lines over which the tickets read on any date to and including final return limit.

To each member has been sent a certificate which must be presented to the ticket agent where ticket is purchased and signed by the person presenting the certificate in pen and ink in the space provided for that purpose. One certificate will cover a member and his family. If any more certificates are required they may be obtained by writing to *GEORGE F. COBB*, I. A. F. E. Traffic Manager, 774 Albany Street, Boston, Mass.

CONVENTION DATES

Sept. 27-29—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Jonesboro, Ark. Date of meeting tentative. H. S. Compton, secretary. Central Fire Station, Little Rock, Ark.

Sept. 27-29—KANSAS STATE FIRE CHIEFS AND STATE FIREMEN'S ASSOCIATIONS. 10th and 39th Annual Conventions respectively, Manhattan, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Oct. 4-9—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual Convention, Hotel Adelphia, Philadelphia, Pa. Secretary-Treasurer, Geo. J. Richardson, Rooms 105-6, A. F. of L. Bldg., Washington, D. C.

Oct. 5-7—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual Convention, Philadelphia, Pa. Secretary Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 12-15—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 33rd Annual Convention, Fresno, Cal. Secretary, Chief Jay W. Stevens, 1014 Merchants Exchange Building, San Francisco, Cal.

Oct. 13-15—FIRE MARSHALS OF NORTH AMERICA. Annual Convention, Memphis, Tenn. Secretary, C. L. Topping, State Fire Marshal of West Virginia, Charleston, W. Va.

Oct. 19-22—INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS. 54th Annual Convention, Hotel Roosevelt, New Orleans, La. Exhibits at U. S. Army Base Bldg., Dauphine and Poland Sts. Secretary, Chief James J. Mulcahy, Yonkers, N. Y. Chairman Exhibit Committee, Chief Wm. F. Daley, Brockton, Mass.

Oct. 20—OFFICERS' ASSN. FIRE PATROLS, SALVAGE CORPS AND PROTECTIVE DEPTS. OF U. S. AND CANADA. Meeting at New Orleans in connection with I. A. F. E. Convention. Secretary, John Ashmead, 76 William St., New York City.

Oct. 26-29—FIRE FIGHTERS' SHORT COURSE. Second Course, Iowa State College, Ames, Ia. Address, L. J. Murphy, Municipal Engineer, Engineering Extension Department, Iowa State College.

Nov. 10-11—MICHIGAN STATE FIRE CHIEFS' ASSOCIATION. First annual convention, Kalamazoo, Mich. Chief Charles H. Crampton, Bay City, president; Chief F. Ford, Highland Park, secretary.

Jan. 18-20, 1927—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION, 45th Annual Convention, Columbus, Neb. Secretary, H. A. Webbert, Kearney.

Aug. 14-16, 1927—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual convention, Elmira, N. Y. Frank A. Emden, secretary-treasurer, 1200 Lenox Ave., Utica, N. Y.

City Pumping Station Fire and Its Lessons

(*Continued from page 924*)

had been entirely burned away and the contents, consisting of the steam pumps, very badly damaged, possibly beyond repair, also the roof over the entire boiler section was burned away, although the roof over the reserve electric generator and main switchboard remained in place all switchboard equipment and wiring was destroyed.

Other City Pumping Equipment Quickly Restored

Immediately after the fire all available help was mustered and work started cutting over the outside stations to other circuits and cutting in direct to the main transformers at the main station, so that all pumping equipment throughout the city was again in operation by about noon on Monday.

While all pumps normally in use have been restored to service, the city has apparently permanently been deprived of its reserve steam pumping equipment and perhaps its private electrical generating equipment and any further misfortune or accident to any material part of remaining equipment would be of very serious consequence, since the city is entirely without elevated storage of any kind or reserve equipment.

New High Service Reservoir to be Built

The city having recently come to realize the necessity of elevated storage, a short time ago voted bonds for the construction of a 12,000,000 gallon high service reservoir, the ultimate location of which will be dependent upon the results obtained from the drilling of several wells which is at the present time going forward and it is hoped to start work on this reservoir just as soon as possible. However, even under the most favorable circumstances, a considerable period must elapse before it will eventually be a reality.

It might also be mentioned that at the time of the pumping station fire, a fire also occurred at the Steel Mill involving a bunk house but was put out without loss.

Conclusions

The following conclusions might be drawn from this experience:

1. The fallacy of using a building of ordinary construction for housing important municipal equipment and not having the transforming and switching equipment such as this fire originated in, located in a fire-proof, cut-off room, especially where it is of such unusual importance as this equipment happened to be.
2. The advisability of having duplicate switching and transforming devices. The present main pumps of this city are still dependent upon a single bank of transformers and from a single transmission line.
3. The advisability of having more than one man, at least on the night shift, in stations of this importance rendering a vital service to a community of over 30,000 people. Had the attendant been killed or more severely disabled, the entire station would have in all probabilty been destroyed.
4. The advisability of having emergency electric connections to all individual pumping plants which perform an important service.

Value of a Fire College to a Department

(*Continued from page 926*)

Used in tanning and leather industries; dye stuffs; chlorides, medicine. Gives off a disabling but non-inflammable gas. Use water on fire.

Hydrogen. In steel cylinders only. Is a non-disabling and highly inflammable gas. Very explosive when mixed with oxygen or air. Water can be used.

Lead Chlorate. See "Chlorates." Water will extinguish fire.

Lead Nitrate. White crystals; promotes combustion in contact with organic matter; poisonous. Used in the manufacture of some orange and yellow pigments and in dyeing and calico printing; lead salts; medicine; matches. Kept in wood barrels. Water will put out the fire. See "Chlorates, Nitrates, etc."

Methyl Alcohol or Wood Alcohol, Columbian Spirits. Clear colorless, inflammable, poisonous liquid. Used in making formaldehyde or denaturing ethyl alcohol. Shipped in tank cars, iron drums and barrels. Gives off an inflammable, explosive gas. Smother, if possible. Roof and floor ventilation. Water must be used in large quantities to dilute burning alcohol, before it can be extinguished.

Nitrate of Potash. A colorless or white crystalline powder; cooling, pungent, salty taste. Used in medicine; gunpowder; fireworks; fertilizer; tobacco. Kept in kegs and boxes. Water will extinguish the fire.

Nitrate of Soda. A colorless crystal, packed in bags, tins and glass bottles. Used in manufacture of nitric acid; in fertilizers; fireworks; medicine. Water will put out the fire.

Nitric Acid. A transparent, colorless liquid. Shipped in carboys, iron drums and glass bottles. Used in the manufacture of dye stuffs, drugs, explosives, celluloid, medicine, photo engraving and etching steel tools. Inflammable with organic substances, such as paper, wood, straw, phosphorus or turpentine. When heated, a non-inflammable disabling, brownish red gas is given off. When nitric acid comes in contact with sulphuric acid, a non-inflammable non-explosive gas is given off, which supports combustion. Gives off an inflammable gas and poisonous fumes when in contact with cellulose materials, causing death. Don't use chemical extinguisher. Thoroughly ventilate building—floor and roof—from the outside, if possible. Use water in large quantities. Be careful that water streams do not spatter the acid on men working. If fumes have been inhaled, give butter, milk, cream, or grease, or three drops of chloroform in a small glass of water every 10 minutes. Go to bed at once and call a doctor. R. R. labels are white.

Organic Materials. Include such articles as wood, alcohol, sugar, starch, turpentine, textiles, coal, flour, straw, paper, fibres, leather, etc.

Oxygen. In steel cylinders; explosive when highly heated, causing more intense combustion.

Potassium. A soft, wax-like silvery metal; rapidly oxidizing in moist air; must be kept submerged in kerosene, naptha or ether. Used in chemical laboratories only, for experimental work. Kept in glass bottles. Dangerous fire hazard. Re-acts violently with water, giving off hydrogen gas, which is inflammable and also explosive when mixed with air.

Phosphorus. A light, yellow, semi-transparent solid; luminous in the dark; exceedingly poisonous. So readily oxidizable in air that it is usually stored under water. Used mostly in match factories and in rat poison. Also a reddish *brown*, odorless, amorphus powder; non-poisonous. Kept in iron drums and glass bottles. Water will put out the fire, but will reignite if phosphorus is exposed to air.

Silver Nitrate. Colorless crystals, darkening on exposure to light in presence of organic matter; bitter, metallic taste; poisonous and corrosive. Used in photography; in dyeing hair; manufacture of mirrors; pharmacy. Kept in amber or black glass bottles. Use water to put out fire.

Sodium. A light, soft silver white metal which oxidizes if keept in air. Kept in iron canisters, glass bottles, immersed in kerosene, naphtha or ether. Used in making hydrogen and sodium peroxide. Roof ventilation. Reacts violently with water, giving off hydrogen gas, which is inflammable and also explosive when mixed with air.

Sodium Peroxide. A yellowish white powder, turning yellow when heated. Kept in tins. Used for bleaching and purifying air in sick rooms. Keep away from organic substances, as it will ignite them when slightly moistened with water, due to the great amount of heat given off. Roof ventilation.

Sulphur. A brittle, yellow solid substance which ignites at 482° F. Used extensively as a bleaching agent in sugar refineries, grain bleachers, glue works; in manufacture of gunpowder, matches, sulphuric acids; medicine, disinfecting. Kept in box cars, barrels, boxes. Explosive in a finely derived state with lead peroxide and warm phosphorus; also when mixed with chlorates or nitrates. It is spontaneously inflammable with lamp black. It is combutible giving off fumes when burning.

Sulphuric Acid. See nitric acid for rules about precautions to be observed in handling and putting out sulphuric acid fires. Used in manufacture of dye stuffs; storage batteries; explosives, fertilizers, leather tanning. Shipped in carboys, iron drums and glass bottles. R. R. labels are white. Non-combustible. Gives off heat when in contact with water and may ignite organic materials.

Turpentine. A colorless oil. Soluble in ether and chloroform; insoluble in water. Obtained by distilling resin. It is readily combustible and its vapors ignite as low as 95 degrees F. It is used in the manufacture of varnishes, for thinning paints and as a solvent. Kept in iron drums; barrels and tank cars. Dangerous fire hazard. Roof and floor ventilation. Water will spread the fire.

Ammonia. In steel cylinders. Explosive when heated.

Missouri Chiefs Hold Convention

The convention of the Missouri State Association of Fire Chiefs was held in Springfield, Mo., on September 1 and 2, and a meeting was held with the Missouri Association of Fire-Fighters. The combined meeting was held to attempt to have a law passed at the next state legislature for the establishment of a pension fund that would benefit the smaller municipalities and towns. At present, it is felt, that the larger cities are well protected but the smaller places with the resulting accidents by the drivers of motor apparatus in volunteer fire departments, have no protection whatsoever.

In addition the convention urged the state to pass a $12,000,000 bond issue to construct four fireproof hospitals for the insane to replace the fire traps that are now being used.

Papers were read by engineers from the National Board of Fire Underwriters and a fire prevention motion picture shown. The new officers of the association are president, Chief T. B. Parks, Hannibal; vice-president, Chief T. E. Fowler, Joplin; secretary-treasurer, Dist. Chief J. T. Lynch, Kansas City. The convention next year will be held in Kirksville on Sept. 7-8.

Pine Bluff, Ark., to Build Fire Station—Bids will be invited soon for the construction of a new fire station in Pine Bluff, Ark. It is expected that the building will be completed by January 1.

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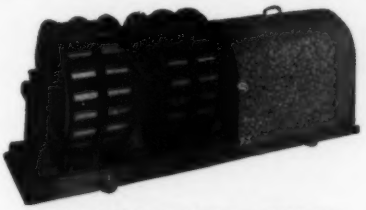

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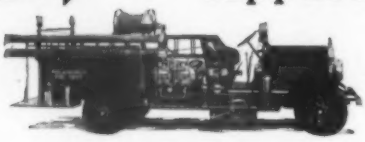

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Modern Fire Alarm Signaling

(*Continued from page* 930)

passes from the top of the switch to the contact and to the transmitter No. 1 coming back and going to the negative side of the switch contact and through the switch to the instrument jack on the protector board. We will now pick up the other half of the circuit starting at the same place we started on the positive section. We will now follow the negative side from the protector board to the relay switch, through the switch and contact, and on to the relay, passing through the relay and on to the key switch, through the key and on to the protector board. From there it goes as shown on the pin switch diagram in article No. 8. The local circuits are easily followed and will not be described in detail.

Troubles and Their Remedies

The troubles that are most experienced will be taken up at this time and while other kinds of trouble may be experienced at any time they will not be as severe as the following. Before looking for trouble, should only one piece of apparatus fail to work, it will be well to look and see if the switch which cuts out that instrument is not in a cut out position.

Bulls eye light fails to light—Lamp burnt out and needs to be replaced; dirty contacts on hook switch—clean to correct trouble.
Annunciator trip stuck—clean and free trip.
Broken wire in circuit—locate and correct.
Blown fuses in fuse block—replace fuses with new ones.

Bulls eye light stays lighted—Board has not been reset—reset board to correct.
Contactor is stuck—free and clean.
Line open outside or inside—test out and close line.

Annunciator number stays down—Board has not been reset—reset board to correct.
Line open inside or outside—close line to correct.
Annunciator magnets open—locate and repair.

Tapper will not strike—Switch is in an off position—put switch in proper position.
Magnets are permanently magnetised—break down the magnetism with A.C. or any other means.
Striking rod is bent—straighten rod to free it.
Resistance is open—replace resistance.

Tapper strikes occasionally—Swinging open line—close line to correct.
Fluctuating battery—locate and repair.
Low battery—repair.

Relay works slow—Spring tension too tight—loosen tension to correct.
Line current weak and relay works slow—build up line to 100 milliamperes.

Relay sticky and holds—Pivot screw too tight—loosen to correct.
Residual magnetism—break down magnetism.
Dirty armature—clean armature.

Telegraph key does not operate—Switch is in an off position—close switch to correct.
Key stuck—release key.
Guard is over key—release guard.

Register keeps running—Incorrect adjustment of relays—make proper adjustment.
Line open—test out and close line.
Register switch in wrong position—set switch properly.

Main line works but local apparatus will not work—Local battery fuse blown—replace with new fuse.
Local battery low or fluctuating—build up battery to normal.

Transmitter runs but board will not work—Board is set for semi-automatic operation or for reserve transmitter—set board for transmitter you are using. Do not do this until the transmitter stops.

Whenever you are testing or hunting trouble on any boards such as described above, always notify the man on watch of your intentions in order to avoid any misunderstanding. Whenever you are replacing any lamps, resistances or any equipment on these boards be sure you put the proper size in place of the old one. Larger wattage lamps than 15 watts are unnecessary as the small ones give plenty of light on an alarm. On open circuits which have been traced as far back as these boards, always look at the contacts and switches for any loose contacts, the instrument jack contacts, keys and relay.

Always keep the key guards over the keys to prevent the striking of a stray blow at any time. Keep all moving parts bright and clean at all times. Keep all dust and dirt away from the relays, etc. If ever you are repairing or doing anything where a lot of dust will rise, make special arrangements to protect all part of the boards.

Specifications for Gong and Joker Boards

The switchboard panels shall be made of the best grade of (marble or slate) free from all metalic veins and hard spots and the boards shall be mounted in (art metal cabinets or iron pipe frames) as desired.

Each gong or Joker line circuit shall be equipped with the following devices.

1 bronze panel located at the top of the board, carrying a 2-inch (green or white bulls eye light) number plate and line circuit annunciator.
1 4-inch main line umbrella type gong.
1 detachable fire department section number list frame.
1 main line relay enclosed in glass dust proof receptacle.
1 set or relay and register local switches.
1 main line closed circuit telegraph key.
1 set of tapper and annunciator switches.
1 standard telephone jack for the insertion of testing instruments or portable telephone set.
1 three-point ground switch.

Each panel or unit of the (joker or gong board) shall be provided with the necessary name and indication plates placed at both ends of the board in a line with the apparatus.

Each board shall be equipped with the necessary gang switches to allow shifting the method of operation etc.

All above boards shall be identical in size and finish and shall harmonize with each other.

Any questions on Gong or Joker boards will be answered as promptly as is possible.

The next article will take semi-automatic operation and semi-automatic operators' pedestals.

Outsiders Attend Detroit Drill School

Under the direction of the Detroit Board of Fire Commissioners and direct supervision of Edward H. Meginnity, chief of the Department, the Detroit drill school has reached a high state of efficiency which is noticeably reflected in company operation at fires. After a short preliminary training of new men, each company is put through a certain set of evolutions. At the end of the season the company receiving the highest grade is presented with an engraved shield. Considerable rivalry exists and the company receiving this award is held in admiration and respect by the rest of the Department. The Drill School is taught by a corp of competent officers who have had years of experience along this line.

District Chief Geo. R. Ward and Captain J. W. Morgan of St. Louis, Missouri, and Captain A. L. Hand of Jackson, Michigan, have been in Detroit for the past two weeks attending drill school, exchanging ideas on fire methods, bunking with some of the busiest companies and responding to alarms.

Much credit is due John H. Broad, Jr., Director of Public Safety and Chief Charles Alt of St. Louis for the present progressive spirit shown by the St. Louis Department. A drill school, along with a vigorous campaign of drills and training will be inaugurated in the near future. District Chief Ward has been a member of the St. Louis Fire Department for 21 years, was appointed Lieutenant in 1909, Captain in 1913 and District Chief in 1925. Captain Morgan has been in the Department since 1912, was made Lieutenant in 1921 and Captain in 1923.

City Manager Fred R. Harris of Jackson, Michigan, and Chief Ben King, feeling that drills and training could be improved sent Captain Hand to Detroit, in order to obtain first hand knowledge of Detroit fire and training school methods. Captain Hand has been a member of the Jackson Fire Department for 13 years but had considerable fire experience before that time, being a member of Hale's Fire Fighters, the fire team that put on the Fire Show during the World's Fair in St. Louis.

Chief Mertz of Akron, O., Broadcasts

As a part of a program arranged by a local newspaper, Chief John Mertz of Akron, Ohio, gave an interesting talk before the microphone on "Up to the Minute Fire Fighting."

That the talk was well received and delivered in a sincere and forceful manner was substantiated by the number of phone calls that were received at the headquarters after the talk, complimenting the chief on his embarkation to the ranks of public speakers. The chief is well known and thought of by other chiefs in the county, and many were the congratulations received.

Chief Mertz is a firm believer in the use of chemicals for fire-fighting, and about eighty-five per cent of the fires in the city, and the chief has the problem of protecting the many rubber goods plants, have been extinguished with this means.

When Chief Mertz was ready to make his bow before the microphone audience, he had to leave to answer a fire alarm, but the delay in the talk did not impair its value.

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19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
23 Caps, Firemens.
24 Chains, Non-Skid, Fire Apparatus.
25 Chassis for Fire Apparatus.
26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
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As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

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For Information on Any Equipment Not Listed Above, Write on This Page or Use Separate Sheet.

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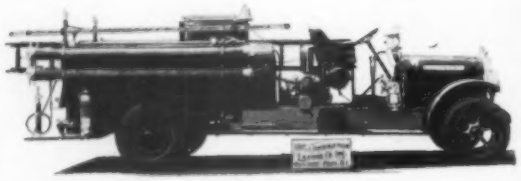

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Continental Six cylinder motor, 100 gallon Booster Tank, 500 gallon Pump, 1200 ft. Hose Body, complete Miscellaneous equipment. Motor recently passed twelve hour Endurance test conducted by National Board of Underwriters. Built and equipped for service.

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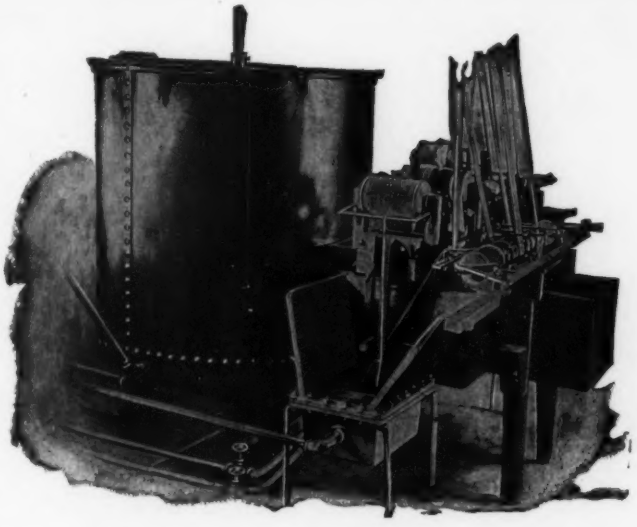
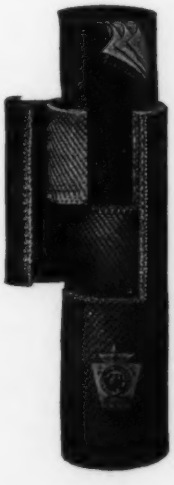


How is it Made?

FABRIC FIRE HOSE is so unusual in its construction that we have been asked again and again just how it is made. Those who have used it and have found its wonderful service qualities, far above the average hose, felt sure that we must have some special process of manufacture that makes Fabric Hose better.

And we have.

For instance, the machine illustrated above is for our patented process of treating the cotton strands with wax and Para gum, making Fabric Hose absolutely waterproof and impervious to mildew and rot.



Many other details of our process, besides this one, are illustrated and explained in a little booklet we shall be glad to mail you for the asking.—"Wax and Para Gum Treated Fire Hose.—How It Is Made." Address:

Fabric Fire Hose Co.

127 Duane St., New York, N. Y.

124-126 W. Lake Street, Chicago

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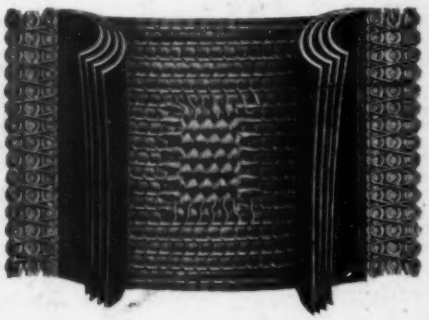
You can't afford to buy Fire Hose on a price basis!

Life and property depend upon the effective functioning of your fire hose. You must be able to depend absolutely upon every foot of hose in service.

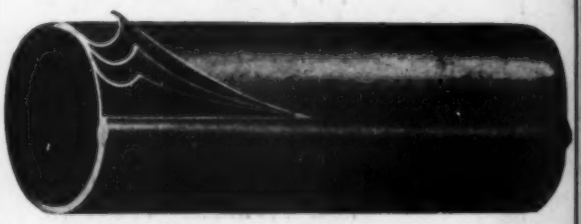
When you buy Fire Hose you make an investment—an investment in efficient, dependable fire protection. Why continue to buy hose on a compromise basis when often if but ten cents a foot were added to the purchase price you could buy the finest hose on the market—hose that will outlast the cheaper hose at least two or three times!

Stop jeopardizing the dependability of your hose equipment by short-sighted purchasing. For over fifty years Paragon and the other famous brands of Eureka manufacture have been the recognized standards of fire hose quality and service.

The secret of Eureka Service lies in the Eureka Construction.



This cross-section of Eureka four-ply, circular multiple woven Fire Hose shows the exclusive smooth interior construction. An extra ply of fine yarn woven in the valleys of the inner surface, levels off that surface of the fabric which comes into contact with the rubber tube—entirely eliminating the ribbing or corrugating of rubber linings, unavoidable with other constructions. This feature adds 25% to cover strength.



There is no finer rubber lining made than the four-ply, hand-made, lap-joined tubes that form the waterway for all brands of Eureka hose. Another factor of Eureka Fire Hose supremacy. From cover to tube, there is no better hose on the market than the famous brands bearing the Eureka trade mark.

EUREKA FIRE HOSE

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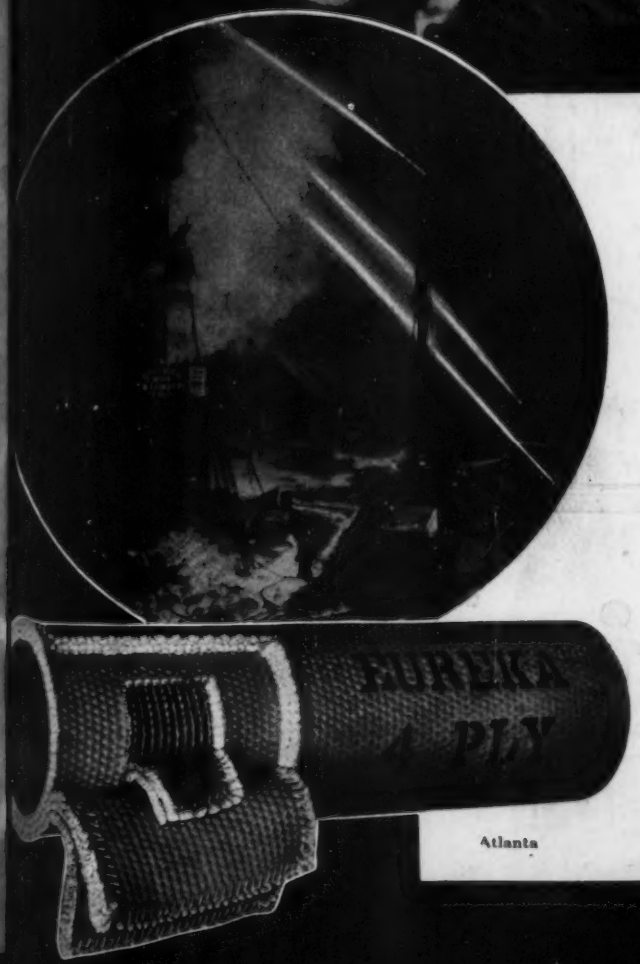
FIRE ENGINEERING, SEPTEMBER 25, 1926
PRINTED BY THE WILLIAMS PRESS, ALBANY, N. Y.

FIRE ENGINEERING

A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

OCTOBER 10, 1926



CONNECT UP WITH EUREKA—
at the Convention!

Each year, when we greet our many friends among the Association at the Convention, we hear new stories of the remarkable performances of Eureka Fire Hose.

We are justly proud of the reputation which Paragon and the other famous brands of Eureka manufacture have enjoyed for over fifty years among fire departments from coast to coast.

When the fire sirens sound and there's a stiff battle with the flames ahead, you have absolute "water insurance" when the hose in the wagons is branded "Eureka."

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The Hardest FIRE I Ever Fought

No. 19 *of a series of experiences of our noted Fire Chiefs*

J. W. WEAVER
Chief of Fire Department
Nashville, Tenn.

With a total of 978 churches, schools, stores, garages, dwellings and other buildings involved, our March 22nd, 1916 fire was undoubtedly the hardest one we have ever encountered.

A street box alarm came in at 11:49 A. M. while a general alarm immediately after that called out the Chief, Asst. Chief, 120 regular men and all members of the repair shop with 14 engine pumpers and 2 aerial trucks to combat a fire covering an area of two and a quarter by a quarter mile in size with the wind blowing 48 to 66 miles an hour.

Under these conditions our men certainly had a real job on their hands and deserved a lot of praise for getting the fire under control by 4:45 in the afternoon.

The property loss was $1,553,752 made up largely from the total destruction of buildings of frame construction and non-fire-resisting roofs. One of our steamers was destroyed, two firemen were injured, and a civilian unfortunately lost his life from a falling electric wire.

J. W. WEAVER
Chief of Fire Department
Nashville, Tenn.

Goodrich Hose was used in bringing this fire under control. For fifty-six years its unvarying superior quality has played a leading part in developing national fire fighting efficiency.

THE B. F. GOODRICH RUBBER COMPANY
ESTABLISHED 1870 *Akron, Ohio*

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